

**CERTIFIED
ANALYTICAL
RESULTS
&
CHAIN of
CUSTODY**

RECEIVED

JUN 18 1992

**OIL CONSERVATION DIV.
SANTA FE**

**APPENDIX G
Certified Analytical Results
and
Chain of Custody**

(1 of 2)

 **SIMON HYDRO-SEARCH**

**December 1991 Investigation
(Various Analytical Results)**



SPL, INC.

REPORT APPROVAL SHEET

WORK ORDER NUMBER: F 1-12-409
F1-12-410

Approved for release by:

Shawn L. Grice Date: 1/8/92
S. Grice, UST Coordinator

M. Scott Sample Date: 1/10/92
S. Sample, Project Management Supervisor

Cynthia Schreiner Date: 1/9/92
C. Schreiner, QA Manager



CLIENT NAME: Simon EEI - Toxcon Division
CLIENT ID:Sump:S

SPL #: F112409-03C

TCLP SUMMARY

PARAMETER	UNCORRECTED RESULTS (mg/L)	CORRECTED RESULTS * (mg/L)	REGULATORY LIMIT (mg/L)
ARSENIC	< 0.007	< 0.007	5.0
BARIUM	2.08	2.41	100.0
CADMIUM	< 0.03	< 0.03	1.0
CHROMIUM	< 0.02	< 0.02	5.0
LEAD	< 0.3	< 0.3	5.0
MERCURY	< 0.002	< 0.002	0.2
SELENIUM	< 0.007	< 0.007	1.0
SILVER	< 0.02	< 0.02	5.0

* = Reference Federal Register 55, 26986 (6/29/90), RCRA Toxicity Characteristic Final Rule.

** = These two compounds are quantitated together.

Compounds reflect terminology and regulatory limits as presented in Federal Register, (3/29/90 & 6/29/90).



CLIENT NAME: Simon EEI - Toxcon Division
CLIENT ID:B1: 5/6

SPL #: F112409-04C

TCLP SUMMARY

PARAMETER	UNCORRECTED RESULTS (mg/L)	CORRECTED RESULTS * (mg/L)	REGULATORY LIMIT (mg/L)
ARSENIC	0.028	0.041	5.0
BARIUM	1.08	1.22	100.0
CADMIUM	< 0.03	< 0.03	1.0
CHROMIUM	< 0.02	< 0.02	5.0
LEAD	< 0.3	< 0.3	5.0
MERCURY	< 0.002	< 0.002	0.2
SELENIUM	< 0.007	< 0.007	1.0
SILVER	< 0.02	< 0.02	5.0

* = Reference Federal Register 55, 26986 (6/29/90), RCRA Toxicity Characteristic Final Rule.

** = These two compounds are quantitated together.

Compounds reflect terminology and regulatory limits as presented in Federal Register, (3/29/90 & 6/29/90).



CLIENT NAME: Simon EEI - Toxcon Division
CLIENT ID: B1: 9/10

SPL #: F112409-05C

TCLP SUMMARY

PARAMETER	UNCORRECTED RESULTS (mg/L)	CORRECTED RESULTS * (mg/L)	REGULATORY LIMIT (mg/L)
ARSENIC	0.035	0.051	5.0
BARIUM	0.86	0.97	100.0
CADMIUM	< 0.03	< 0.03	1.0
CHROMIUM	< 0.02	< 0.02	5.0
LEAD	< 0.3	< 0.3	5.0
MERCURY	< 0.002	< 0.002	0.2
SELENIUM	< 0.007	< 0.007	1.0
SILVER	< 0.02	< 0.02	5.0

* = Reference Federal Register 55, 26986 (6/29/90), RCRA Toxicity Characteristic Final Rule.

** = These two compounds are quantitated together.

Compounds reflect terminology and regulatory limits as presented in Federal Register, (3/29/90 & 6/29/90).



CLIENT NAME: Simon EEI - Toxcon Division
CLIENT ID: B2: 5/6

SPL #: F112409-06C

TCLP SUMMARY

PARAMETER	UNCORRECTED RESULTS (mg/L)	CORRECTED RESULTS * (mg/L)	REGULATORY LIMIT (mg/L)
ARSENIC	0.040	0.044	5.0
BARIUM	0.68	0.77	100.0
CADMIUM	< 0.03	< 0.03	1.0
CHROMIUM	< 0.02	< 0.02	5.0
LEAD	< 0.3	< 0.3	5.0
MERCURY	< 0.002	< 0.002	0.2
SELENIUM	< 0.007	< 0.007	1.0
SILVER	< 0.02	< 0.02	5.0

* = Reference Federal Register 55, 26986 (6/29/90), RCRA Toxicity Characteristic Final Rule.

** = These two compounds are quantitated together.

Compounds reflect terminology and regulatory limits as presented in Federal Register, (3/29/90 & 6/29/90).



CLIENT NAME: Simon EEI - Toxcon Division
CLIENT ID: B2: 10/11

SPL #: F112409-07C

TCLP SUMMARY

PARAMETER	UNCORRECTED RESULTS (mg/L)	CORRECTED RESULTS * (mg/L)	REGULATORY LIMIT (mg/L)
ARSENIC	0.030	0.030	5.0
BARIUM	0.56	0.63	100.0
CADMIUM	< 0.03	< 0.03	1.0
CHROMIUM	< 0.02	< 0.02	5.0
LEAD	< 0.3	< 0.3	5.0
MERCURY	< 0.002	< 0.002	0.2
SELENIUM	< 0.007	< 0.007	1.0
SILVER	< 0.02	< 0.02	5.0

* = Reference Federal Register 55, 26986 (6/29/90), RCRA Toxicity Characteristic Final Rule.

** = These two compounds are quantitated together.

Compounds reflect terminology and regulatory limits as presented in Federal Register, (3/29/90 & 6/29/90).



CLIENT NAME: Simon EEI - Toxcon Division
CLIENT ID: B3: 5/6

SPL #: F112409-08C

TCLP SUMMARY

PARAMETER	UNCORRECTED RESULTS (mg/L)	CORRECTED RESULTS * (mg/L)	REGULATORY LIMIT (mg/L)
ARSENIC	0.042	0.061	5.0
BARIUM	0.76	0.86	100.0
CADMIUM	< 0.03	< 0.03	1.0
CHROMIUM	< 0.02	< 0.02	5.0
LEAD	< 0.3	< 0.3	5.0
MERCURY	< 0.002	< 0.002	0.2
SELENIUM	< 0.007	< 0.007	1.0
SILVER	< 0.02	< 0.02	5.0

* = Reference Federal Register 55, 26986 (6/29/90), RCRA Toxicity Characteristic Final Rule.

** = These two compounds are quantitated together.

Compounds reflect terminology and regulatory limits as presented in Federal Register, (3/29/90 & 6/29/90).



CLIENT NAME: Simon EEI - Toxcon Division
CLIENT ID: B3: 10/11

SPL #: F112409-09C

TCLP SUMMARY

PARAMETER	UNCORRECTED RESULTS (mg/L)	CORRECTED RESULTS * (mg/L)	REGULATORY LIMIT (mg/L)
ARSENIC	0.017	0.017	5.0
BARIUM	0.68	0.77	100.0
CADMIUM	< 0.03	< 0.03	1.0
CHROMIUM	< 0.02	< 0.02	5.0
LEAD	< 0.3	< 0.3	5.0
MERCURY	< 0.002	< 0.002	0.2
SELENIUM	< 0.007	< 0.007	1.0
SILVER	< 0.02	< 0.02	5.0

* = Reference Federal Register 55, 26986 (6/29/90), RCRA Toxicity Characteristic Final Rule.

** = These two compounds are quantitated together.

Compounds reflect terminology and regulatory limits as presented in Federal Register, (3/29/90 & 6/29/90).



CLIENT NAME: Simon EEI - Toxcon Division
CLIENT ID: B4: 5/6

SPL #: F112409-10C

TCLP SUMMARY

PARAMETER	UNCORRECTED RESULTS (mg/L)	CORRECTED RESULTS * (mg/L)	REGULATORY LIMIT (mg/L)
ARSENIC	0.039	0.039	5.0
BARIUM	0.67	0.76	100.0
CADMIUM	< 0.03	< 0.03	1.0
CHROMIUM	< 0.02	< 0.02	5.0
LEAD	< 0.3	< 0.3	5.0
MERCURY	< 0.002	< 0.002	0.2
SELENIUM	< 0.007	< 0.007	1.0
SILVER	< 0.02	< 0.02	5.0

* = Reference Federal Register 55, 26986 (6/29/90), RCRA Toxicity Characteristic Final Rule.

** = These two compounds are quantitated together.

Compounds reflect terminology and regulatory limits as presented in Federal Register, (3/29/90 & 6/29/90).



CLIENT NAME: Simon EEI - Toxcon Division
CLIENT ID: B4: 10/11

SPL #: F112409-11C

TCLP SUMMARY

PARAMETER	UNCORRECTED RESULTS (mg/L)	CORRECTED RESULTS * (mg/L)	REGULATORY LIMIT (mg/L)
ARSENIC	0.032	0.047	5.0
BARIUM	0.69	0.78	100.0
CADMIUM	< 0.03	< 0.03	1.0
CHROMIUM	< 0.02	< 0.02	5.0
LEAD	< 0.3	< 0.3	5.0
MERCURY	< 0.002	< 0.002	0.2
SELENIUM	< 0.007	< 0.007	1.0
SILVER	< 0.02	< 0.02	5.0

* = Reference Federal Register 55, 26986 (6/29/90), RCRA Toxicity Characteristic Final Rule.

** = These two compounds are quantitated together.

Compounds reflect terminology and regulatory limits as presented in Federal Register, (3/29/90 & 6/29/90).



CLIENT NAME: Simon EEI - Toxcon Division
CLIENT ID: B5: 11/12

SPL #: F112409-13C

TCLP SUMMARY

PARAMETER	UNCORRECTED RESULTS (mg/L)	CORRECTED RESULTS * (mg/L)	REGULATORY LIMIT (mg/L)
ARSENIC	< 0.007	< 0.007	5.0
BARIUM	1.64	1.86	100.0
CADMIUM	< 0.03	< 0.03	1.0
CHROMIUM	< 0.02	< 0.02	5.0
LEAD	< 0.3	< 0.3	5.0
MERCURY	< 0.002	< 0.002	0.2
SELENIUM	< 0.007	< 0.007	1.0
SILVER	< 0.02	< 0.02	5.0

* = Reference Federal Register 55, 26986 (6/29/90), RCRA Toxicity Characteristic Final Rule.

** = These two compounds are quantitated together.

Compounds reflect terminology and regulatory limits as presented in Federal Register, (3/29/90 & 6/29/90).



CLIENT NAME: Simon EEI - Toxcon Division
CLIENT ID: B6: 9.5/10.5

SPL #: F112409-14C

TCLP SUMMARY

PARAMETER	UNCORRECTED RESULTS (mg/L)	CORRECTED RESULTS * (mg/L)	REGULATORY LIMIT (mg/L)
ARSENIC	0.012	0.018	5.0
BARIUM	1.61	1.82	100.0
CADMIUM	< 0.03	< 0.03	1.0
CHROMIUM	< 0.02	< 0.02	5.0
LEAD	< 0.3	< 0.3	5.0
MERCURY	< 0.002	< 0.002	0.2
SELENIUM	< 0.007	< 0.007	1.0
SILVER	< 0.02	< 0.02	5.0

* = Reference Federal Register 55, 26986 (6/29/90), RCRA Toxicity Characteristic Final Rule.

** = These two compounds are quantitated together.

Compounds reflect terminology and regulatory limits as presented in Federal Register, (3/29/90 & 6/29/90).



CLIENT NAME: Simon EEI - Toxcon Division
CLIENT ID: BG1: 0/1

SPL #: F112409-16C

TCLP SUMMARY

PARAMETER	UNCORRECTED RESULTS (mg/L)	CORRECTED RESULTS * (mg/L)	REGULATORY LIMIT (mg/L)
ARSENIC	0.009	0.013	5.0
BARIUM	1.63	1.84	100.0
CADMIUM	< 0.03	< 0.03	1.0
CHROMIUM	< 0.02	< 0.02	5.0
LEAD	< 0.3	< 0.3	5.0
MERCURY	< 0.002	< 0.002	0.2
SELENIUM	< 0.007	< 0.007	1.0
SILVER	< 0.02	< 0.02	5.0

* = Reference Federal Register 55, 26986 (6/29/90), RCRA Toxicity Characteristic Final Rule.

** = These two compounds are quantitated together.

Compounds reflect terminology and regulatory limits as presented in Federal Register, (3/29/90 & 6/29/90).



CLIENT NAME: Simon EEI - Toxcon Division
CLIENT ID: BG2: 0/1

SPL #: F112409-17C

TCLP SUMMARY

PARAMETER	UNCORRECTED RESULTS (mg/L)	CORRECTED RESULTS * (mg/L)	REGULATORY LIMIT (mg/L)
ARSENIC	< 0.007	< 0.007	5.0
BARIUM	0.91	1.06	100.0
CADMIUM	< 0.03	< 0.03	1.0
CHROMIUM	< 0.02	< 0.02	5.0
LEAD	< 0.3	< 0.3	5.0
MERCURY	< 0.002	< 0.002	0.2
SELENIUM	< 0.007	< 0.007	1.0
SILVER	< 0.02	< 0.02	5.0

* = Reference Federal Register 55, 26986 (6/29/90), RCRA Toxicity Characteristic Final Rule.

** = These two compounds are quantitated together.

Compounds reflect terminology and regulatory limits as presented in Federal Register, (3/29/90 & 6/29/90).



CLIENT NAME: Simon EEI - Toxcon Division
CLIENT ID: BG1: 0/1

SPL #: F112409-16C

TCLP SUMMARY

PARAMETER	UNCORRECTED RESULTS (mg/L)	CORRECTED RESULTS * (mg/L)	REGULATORY LIMIT (mg/L)
ARSENIC	< 0.007	< 0.007	5.0
BARIUM	2.73	3.09	100.0
CADMIUM	< 0.03	< 0.03	1.0
CHROMIUM	< 0.02	< 0.02	5.0
LEAD	< 0.3	< 0.3	5.0
MERCURY	< 0.002	< 0.002	0.2
SELENIUM	< 0.007	< 0.007	1.0
SILVER	< 0.02	< 0.02	5.0

* = Reference Federal Register 55, 26986 (6/29/90), RCRA Toxicity Characteristic Final Rule.

** = These two compounds are quantitated together.

Compounds reflect terminology and regulatory limits as presented in Federal Register, (3/29/90 & 6/29/90).



CLIENT NAME: Simon EEI - Toxcon Division
CLIENT ID: BG3: 0/1

SPL #: F112409-18C

TCLP SUMMARY

PARAMETER	UNCORRECTED RESULTS (mg/L)	CORRECTED RESULTS * (mg/L)	REGULATORY LIMIT (mg/L)
ARSENIC	< 0.007	< 0.007	5.0
BARIUM	1.08	1.25	100.0
CADMIUM	< 0.03	< 0.03	1.0
CHROMIUM	< 0.02	< 0.02	5.0
LEAD	< 0.3	< 0.3	5.0
MERCURY	< 0.002	< 0.002	0.2
SELENIUM	< 0.007	< 0.007	1.0
SILVER	< 0.02	< 0.02	5.0

* = Reference Federal Register 55, 26986 (6/29/90), RCRA Toxicity Characteristic Final Rule.

** = These two compounds are quantitated together.

Compounds reflect terminology and regulatory limits as presented in Federal Register, (3/29/90 & 6/29/90).



CLIENT NAME: Simon EEI - Toxcon Division
CLIENT ID: BG4: 0/1

SPL #: F112410-01C

TCLP SUMMARY

PARAMETER	UNCORRECTED RESULTS (mg/L)	CORRECTED RESULTS * (mg/L)	REGULATORY LIMIT (mg/L)
ARSENIC	0.013	0.013	5.0
BARIUM	0.68	0.77	100.0
CADMIUM	< 0.03	< 0.03	1.0
CHROMIUM	< 0.02	< 0.02	5.0
LEAD	< 0.3	< 0.3	5.0
MERCURY	< 0.002	< 0.002	0.2
SELENIUM	< 0.007	< 0.007	1.0
SILVER	< 0.02	< 0.02	5.0

* = Reference Federal Register 55, 26986 (6/29/90), RCRA Toxicity Characteristic Final Rule.

** = These two compounds are quantitated together.

Compounds reflect terminology and regulatory limits as presented in Federal Register, (3/29/90 & 6/29/90).



CLIENT NAME: Simon EEI - Toxcon Division
CLIENT ID: B5: 15/16.5

SPL #: F112410-03C

TCLP SUMMARY

PARAMETER	UNCORRECTED RESULTS (mg/L)	CORRECTED RESULTS *	REGULATORY LIMIT (mg/L)
ARSENIC	< 0.007	< 0.007	5.0
BARIUM	2.11	2.39	100.0
CADMIUM	< 0.03	< 0.03	1.0
CHROMIUM	< 0.02	< 0.02	5.0
LEAD	< 0.3	< 0.3	5.0
MERCURY	< 0.002	< 0.002	0.2
SELENIUM	< 0.007	< 0.007	1.0
SILVER	< 0.02	< 0.02	5.0

* = Reference Federal Register 55, 26986 (6/29/90), RCRA Toxicity Characteristic Final Rule.

** = These two compounds are quantitated together.

Compounds reflect terminology and regulatory limits as presented in Federal Register, (3/29/90 & 6/29/90).



*****SUMMARY REPORT*****

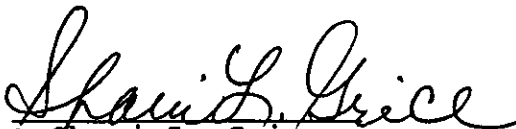
Client: Simon EEI - Toxcon Division

Site: Baker Hughes
2800 West Marland
Hobbs, New Mexico

Project: 504867.00

SPL ID	CLIENT ID	MATRIX	BENZENE	TOLUENE	ETHYLBENZ.	XYLENE	TPH-IR	TPH-GC	LEAD	MTBE
F112409-01	WW121991	Water	6µg/L	2µg/L	1µg/L	4µg/L	NDmg/L			
F112409-02	Sump:L	Water	22µg/L	80µg/L	38µg/L	180µg/L	900mg/L			
F112409-03	Sump:S	Soil	1700µg/Kg	6500µg/Kg	44000µg/Kg	88000µg/Kg	220000mg/Kg			
F112409-04	B1: 5/6	Soil	NDµg/Kg	10µg/Kg	11µg/Kg	63µg/Kg	42mg/Kg			
F112409-05	B1: 9/10	Soil	NDµg/Kg	3µg/Kg	5µg/Kg	32µg/Kg	18mg/Kg			
F112409-06	B2: 5/6	Soil	NDµg/Kg	1µg/Kg	2µg/Kg	4µg/Kg	310mg/Kg			
F112409-07	B2: 10/11	Soil	NDµg/Kg	1µg/Kg	2µg/Kg	5µg/Kg	25mg/Kg			
F112409-08	B3: 5/6	Soil	NDµg/Kg	1µg/Kg	NDµg/Kg	4µg/Kg	74mg/Kg			
F112409-09	B3: 10/11	Soil	NDµg/Kg	3µg/Kg	8µg/Kg	37µg/Kg	58mg/Kg			
F112409-10	B4: 5/6	Soil	NDµg/Kg	11µg/Kg	10µg/Kg	40µg/Kg	220mg/Kg			
F112409-11	B4: 10/11	Soil	NDµg/Kg	2µg/Kg	2µg/Kg	2µg/Kg	97mg/Kg			

BTEX - Method-5030/8020 [SW846]
TPH-IR - Method-418.1


Shari L. Grice
UST Coordinator



*****SUMMARY REPORT*****

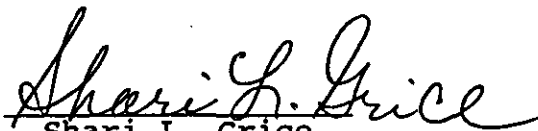
Client: Simon EEI - Toxcon Division

Site: Baker Hughes
2800 West Marland
Hobbs, New Mexico

Project: 504867.00

SPL ID	CLIENT ID	MATRIX	BENZENE	TOLUENE	ETHYLBENZ.	XYLENE	TPH-IR	TPH-GC	LEAD	MTBE
F112409-13	B5: 11/12	Soil	NDµg/Kg	28µg/Kg	860µg/Kg	880µg/Kg	2100mg/Kg			
F112409-14	B6: 9.5/10	Soil	NDµg/Kg	12µg/Kg	290µg/Kg	74µg/Kg	2800mg/Kg			
F112409-15	B6: 14.5/1	Soil	NDµg/Kg	12µg/Kg	230µg/Kg	52µg/Kg	5200mg/Kg			
F112409-16	BG1: 0/1	Soil	NDµg/Kg	NDµg/Kg	2µg/Kg	2µg/Kg	NDmg/Kg			
F112409-17	BG2: 0/1	Soil	NDµg/Kg	NDµg/Kg	NDµg/Kg	1µg/Kg	NDmg/Kg			
F112409-18	BG3: 0/1	Soil	NDµg/Kg	1µg/Kg	1µg/Kg	4µg/Kg	12mg/Kg			

BTEX - Method-5030/8020 [SW846]
TPH-IR - Method-418.1


Shari L. Grice
UST Coordinator



****SUMMARY REPORT****

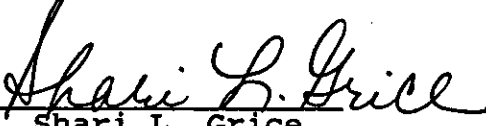
Client: Simon EEI - Toxcon Division

Site: Baker Hughes
2800 West Marland
Hobbs, New Mexico

Project: 504867.00

SPL ID	CLIENT ID	MATRIX	BENZENE	TOLUENE	ETHYLBENZ.	XYLENE	TPH-IR	TPH-GC	LEAD	MTBE
F112410-01	BG4: 0/1	Soil	NDµg/Kg	2µg/Kg	2µg/Kg	12µg/Kg	34mg/Kg			
F112410-03	B5: 15/16.	Soil	74µg/Kg	87µg/Kg	2000µg/Kg	2600µg/Kg	3800mg/Kg			

BTEX - Method-5030/8020 [SW846]
TPH-IR - Method-418.1


Shari L. Grice
UST Coordinator



CASE NARRATIVE

QUALITY CONTROL RESULTS SUMMARY

WORK ORDER NO.: F1-12-409

SAMPLE NO: 04C

Due to matrix interference, the matrix spike recovery for Selenium is below the minimum QC limits.

SOUTHERN PETROLEUM LABORATORIES

Meaza Mariam
Meaza Mariam
Metals Supervisor



CASE NARRATIVE

QUALITY CONTROL RESULTS SUMMARY

WORK ORDER NO.: F1-12-409

SAMPLE NO: 04C

Due to matrix interference, the matrix spike recovery for Arsenic is below the minimum QC limits.

SOUTHERN PETROLEUM LABORATORIES

Meaza Mariam

**Meaza Mariam
Metals Supervisor**



CASE NARRATIVE

QUALITY CONTROL RESULTS SUMMARY

WORK ORDER NO.: F1-12-410

SAMPLE NO: 03C

Due to matrix interference, the matrix spike recovery for Selenium is below the minimum QC limits.

SOUTHERN PETROLEUM LABORATORIES

Meaza Marian
Meaza Marian
Metals Supervisor



Certificate of Analysis No. F112409-01

Simon EEI - Toxcon Division
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

01/09/92

Project: 504867.00
Site: Baker Hughes
2800 West Marland
Hobbs, New Mexico
Sample No: WW121991
Sample of: Water
Sampled by: Simon EEI - Toxcon Division
Sample Date: 12/19/91 17:00:00

A N A L Y T I C A L R E S U L T S

ANALYSIS/METHOD	RESULTS	DETECTION LIMIT
BENZENE Method-5030/8020 [SW846]	6 $\mu\text{g/L}$	1 $\mu\text{g/L}$
TOLUENE Method-5030/8020 [SW846]	2 $\mu\text{g/L}$	1 $\mu\text{g/L}$
ETHYLBENZENE Method-5030/8020 [SW846]	1 $\mu\text{g/L}$	1 $\mu\text{g/L}$
XYLENES Method-5030/8020 [SW846]	4 $\mu\text{g/L}$	1 $\mu\text{g/L}$
TOTAL PETROLEUM HYDROCARBONS Method-418.1	ND mg/L	1 mg/L

BTEX ANALYZED BY: BWC
TPH ANALYZED BY: FM

DATE/TIME: 12/26/91
DATE/TIME: 12/23/91

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.
QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Incorporated

Shari L. Grice
Shari L. Grice



Simon EEI - Toxcon Division
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F112409-01C
Invoice #: 405614
Report Date: 01/09/92

504867.00
WW121991
Baker Hughes
2800 West Marland
Hobbs, New Mexico

Date Received: 12/21/91
Date Collected: 12/19/91 17:00:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
pH METHOD 150.1	7.74 pH units		12/26/91	KEW

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.

SPL ENVIRONMENTAL LABORATORIES, INC.



Simon EEI - Toxcon Division
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F112409-01D
Invoice #: 405614
Report Date: 01/09/92

504867.00
WW121991
Baker Hughes
2800 West Marland
Hobbs, New Mexico

Date Received: 12/21/91
Date Collected: 12/19/91 17:00:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Silver total METHOD 272.1	ND mg/L	0.02	12/27/91	JM
Arsenic total METHOD 206.2	ND mg/L	0.007	01/04/92	WFL
Barium total METHOD 6010	1.40 mg/L	0.07	12/26/92	DQ
Cadmium total METHOD 213.1	ND mg/L	0.03	12/27/92	JM
Chromium total METHOD 6010	<0.02 mg/L	0.02	12/21/91	DQ
Mercury, total METHOD 245.1	ND mg/L	0.002	12/27/92	JM
Acid Digestion - Microwave EPA CLP SOW	Complete		12/26/91	CG
Lead, Total METHOD 7420	ND mg/L	0.3	12/27/92	JM
TCLP Leachate extraction METHOD 1311	Complete		12/24/91	ET
Selenium total METHOD 270.2	ND mg/L	0.007	01/06/92	WFL

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.



Certificate of Analysis No. F112409-02

Simon EEI - Toxcon Division
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

01/09/92

Project: 504867.00
Site: Baker Hughes
2800 West Marland
Hobbs, New Mexico
Sample No: Sump:L
Sample of: Water
Sampled by: Simon EEI - Toxcon Division
Sample Date: 12/19/91 16:30:00

ANALYTICAL RESULTS

ANALYSIS/METHOD	RESULTS	DETECTION LIMIT
BENZENE Method-5030/8020 [SW846]	22 $\mu\text{g/L}$	1 $\mu\text{g/L}$
TOLUENE Method-5030/8020 [SW846]	80 $\mu\text{g/L}$	1 $\mu\text{g/L}$
ETHYLBENZENE Method-5030/8020 [SW846]	38 $\mu\text{g/L}$	1 $\mu\text{g/L}$
XYLENES Method-5030/8020 [SW846]	180 $\mu\text{g/L}$	1 $\mu\text{g/L}$
TOTAL PETROLEUM HYDROCARBONS Method-418.1	900 mg/L	10 mg/L

BTEX ANALYZED BY: BWC
TPH ANALYZED BY: FM

DATE/TIME: 12/27/91
DATE/TIME: 12/23/91

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.
QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Incorporated

Shari L. Grice
Shari L. Grice



Simon EEI - Toxcon Division
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F112409-02C
Invoice #: 405614
Report Date: 01/09/92

504867.00
Sump:L
Baker Hughes
2800 West Marland
Hobbs, New Mexico

Date Received: 12/21/91
Date Collected: 12/19/91 16:30:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
pH METHOD 150.1	7.25 pH units		12/26/91	KEW

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.

SPL ENVIRONMENTAL LABORATORIES, INC.



Simon EEI - Toxcon Division
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F112409-02D
Invoice #: 405614
Report Date: 01/09/92

504867.00
Sump:L
Baker Hughes
2800 West Marland
Hobbs, New Mexico

Date Received: 12/21/91
Date Collected: 12/19/91 16:30:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Silver total METHOD 272.1	ND mg/L	0.02	12/27/91	JM
Arsenic total METHOD 206.2	ND mg/L	0.007	01/04/92	WFL
Barium total METHOD 6010	1.48 mg/L	0.07	12/26/92	DQ
Cadmium total METHOD 213.1	ND mg/L	0.03	12/27/92	JM
Chromium total METHOD 6010	0.04 mg/L	0.02	12/21/91	DQ
Mercury, total METHOD 245.1	ND mg/L	0.002	12/27/92	JM
Acid Digestion - Microwave EPA CLP SOW	Complete		12/26/91	CG
Lead, Total METHOD 7420	1.6 mg/L	0.3	12/27/92	JM
TCLP Leachate extraction METHOD 1311	Complete		12/24/91	ET
Selenium total METHOD 270.2	ND mg/L	0.007	01/06/92	WFL

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.



Simon EEI - Toxcon Division
3334 Richmond Ave.
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Houston, TX 77098
Attn: Roger Pokluda

01/09/92

Project: 504867.00
Site: Baker Hughes
2800 West Marland
Hobbs, New Mexico
Sample No: Sump:S
Sample of: Soil
Sampled by: Simon EEI - Toxcon Division
Sample Date: 12/19/91 16:30:00

ANALYTICAL RESULTS

ANALYSIS/METHOD -----	RESULTS -----		DETECTION LIMIT -----	
BENZENE Method-5030/8020 [SW846]	1700	µg/Kg	125	µg/Kg
TOLUENE Method-5030/8020 [SW846]	6500	µg/Kg	125	µg/Kg
ETHYLBENZENE Method-5030/8020 [SW846]	44000	µg/Kg	125	µg/Kg
XYLENES Method-5030/8020 [SW846]	88000	µg/Kg	125	µg/Kg
TOTAL PETROLEUM HYDROCARBONS Method-418.1	220000	mg/Kg	2000	mg/Kg

BTEX ANALYZED BY: LT DATE/TIME: 12/26/91
TPH ANALYZED BY: LB/JC/FM DATE/TIME: 12/27/91

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.
QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Incorporated

Shari L. Grice
Shari L. Grice



Simon EEI - Toxcon Division
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F112409-03B
Invoice #: 405614
Report Date: 01/09/92

504867.00
Sump:S
Baker Hughes
2800 West Marland
Hobbs, New Mexico

Date Received: 12/21/91
Date Collected: 12/19/91 16:30:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Petroleum Hydrocarbons METHOD 418.1	220000 mg/Kg	2000	12/27/91	LB/JC/FM
pH METHOD 9045	7.59 pH units		12/24/91	KEW

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.

SPL ENVIRONMENTAL LABORATORIES, INC.



Simon EEI - Toxcon Division
3334 Richmond Ave.
Suite 200
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Attn: Roger Pokluda

F112409-03C
Invoice #: 405614
Report Date: 01/09/92

504867.00
Sump:S
Baker Hughes
2800 West Marland
Hobbs, New Mexico

Date Received: 12/21/91
Date Collected: 12/19/91 16:30:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Silver, TCLP Leachate METHOD 7760	ND mg/L	0.02	12/27/91	JM
Arsenic, TCLP Leachate METHOD 7060	ND mg/L	0.007	01/04/92	WFL
Barium, TCLP Leachate METHOD 6010	2.08 mg/L	0.07	12/31/91	MM/DAO
Cadmium, TCLP Leachate METHOD 7130	ND mg/L	0.03	12/27/91	JM
Chromium, TCLP Leachate METHOD 6010	ND mg/L	0.02	12/31/91	MM/DAO
Mercury, TCLP Leachate METHOD 7470	ND mg/L	0.002	12/30/91	JM
Acid Digestion - Microwave EPA CLP SOW	Complete		12/26/91	CG
Lead, TCLP Leachate METHOD 7420	ND mg/L	0.3	12/27/91	JM
TCLP Leachate extraction METHOD 1311	Complete		12/24/91	ET
Selenium, TCLP Leachate METHOD 7740	ND mg/L	0.007	01/06/92	WFL

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.



Certificate of Analysis No. F112409-04

Simon EEI - Toxcon Division
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

01/09/92

Project: 504867.00
Site: Baker Hughes
2800 West Marland
Hobbs, New Mexico
Sample No: B1: 5/6
Sample of: Soil
Sampled by: Simon EEI - Toxcon Division
Sample Date: 12/20/91 08:35:00

ANALYTICAL RESULTS

ANALYSIS/METHOD	RESULTS	DETECTION LIMIT
BENZENE Method-5030/8020 [SW846]	ND $\mu\text{g/Kg}$	1 $\mu\text{g/Kg}$
TOLUENE Method-5030/8020 [SW846]	10 $\mu\text{g/Kg}$	1 $\mu\text{g/Kg}$
ETHYLBENZENE Method-5030/8020 [SW846]	11 $\mu\text{g/Kg}$	1 $\mu\text{g/Kg}$
XYLENES Method-5030/8020 [SW846]	63 $\mu\text{g/Kg}$	1 $\mu\text{g/Kg}$
TOTAL PETROLEUM HYDROCARBONS Method-418.1	42 mg/Kg	10 mg/Kg

BTEX ANALYZED BY: LT
TPH ANALYZED BY: LB/JC/FM

DATE/TIME: 12/23/91
DATE/TIME: 12/27/91

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.
QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Incorporated

Shari L. Grice
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Simon EEI - Toxcon Division
3334 Richmond Ave.
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Houston, TX 77098
Attn: Roger Pokluda

F112409-04B
Invoice #: 405614
Report Date: 01/09/92

504867.00
B1: 5/6
Baker Hughes
2800 West Marland
Hobbs, New Mexico

Date Received: 12/21/91
Date Collected: 12/20/91 08:35:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Petroleum Hydrocarbons METHOD 418.1	42 mg/Kg	10	12/27/91	LB/JC/FM
pH METHOD 9045	8.68 pH units		12/24/91	KEW

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.

SPL ENVIRONMENTAL LABORATORIES, INC.



Simon EEI - Toxcon Division
3334 Richmond Ave.
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Attn: Roger Pokluda

F112409-04C
Invoice #: 405614
Report Date: 01/09/92

504867.00
B1: 5/6
Baker Hughes
2800 West Marland
Hobbs, New Mexico

Date Received: 12/21/91
Date Collected: 12/20/91 08:35:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Silver, TCLP Leachate METHOD 7760	ND mg/L	0.02	12/27/91	JM
Arsenic, TCLP Leachate METHOD 7060	0.028 mg/L	0.007	01/04/92	WFL
Barium, TCLP Leachate METHOD 6010	1.08 mg/L	0.07	12/31/91	MM/DAO
Cadmium, TCLP Leachate METHOD 7130	ND mg/L	0.03	12/27/91	JM
Chromium, TCLP Leachate METHOD 6010	ND mg/L	0.02	12/31/91	MM/DAO
Mercury, TCLP Leachate METHOD 7470	ND mg/L	0.002	12/30/91	JM
Acid Digestion - Microwave EPA CLP SOW	Complete		12/27/91	CG
Lead, TCLP Leachate METHOD 7420	ND mg/L	0.3	12/30/91	JM
TCLP Leachate extraction METHOD 1311	Complete		12/24/91	ET
Selenium, TCLP Leachate METHOD 7740	ND mg/L	0.007	01/06/92	WFL

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.



Certificate of Analysis No. F112409-05

Simon EEI - Toxcon Division
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

01/09/92

Project: 504867.00
Site: Baker Hughes
2800 West Marland
Hobbs, New Mexico
Sample No: B1: 9/10
Sample of: Soil
Sampled by: Simon EEI - Toxcon Division
Sample Date: 12/20/91 09:05:00

A N A L Y T I C A L R E S U L T S

ANALYSIS/METHOD -----	RESULTS -----		DETECTION LIMIT -----	
BENZENE Method-5030/8020 [SW846]	ND	µg/Kg	1	µg/Kg
TOLUENE Method-5030/8020 [SW846]	3	µg/Kg	1	µg/Kg
ETHYLBENZENE Method-5030/8020 [SW846]	5	µg/Kg	1	µg/Kg
XYLENES Method-5030/8020 [SW846]	32	µg/Kg	1	µg/Kg
TOTAL PETROLEUM HYDROCARBONS Method-418.1	18	mg/Kg	10	mg/Kg

BTEX ANALYZED BY: LT
TPH ANALYZED BY: LB/JC/FM

DATE/TIME: 12/23/91
DATE/TIME: 12/27/91

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.
QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Incorporated

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Attn: Roger Pokluda

F112409-05B
Invoice #: 405614
Report Date: 01/09/92

504867.00
B1: 9/10
Baker Hughes
2800 West Marland
Hobbs, New Mexico

Date Received: 12/21/91
Date Collected: 12/20/91 09:05:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Petroleum Hydrocarbons METHOD 418.1	18 mg/Kg	10	12/27/91	LB/JC/FM
pH METHOD 9045	9.02 pH units		12/24/91	KEW

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.

SPL ENVIRONMENTAL LABORATORIES, INC.



Simon EEI - Toxcon Division
3334 Richmond Ave.
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Houston, TX 77098
Attn: Roger Pokluda

F112409-05C
Invoice #: 405614
Report Date: 01/09/92

504867.00
B1: 9/10
Baker Hughes
2800 West Marland
Hobbs, New Mexico

Date Received: 12/21/91
Date Collected: 12/20/91 09:05:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Silver, TCLP Leachate METHOD 7760	ND mg/L	0.02	12/27/91	JM
Arsenic, TCLP Leachate METHOD 7060	0.035 mg/L	0.007	01/04/92	WFL
Barium, TCLP Leachate METHOD 6010	0.86 mg/L	0.07	12/31/91	MM/DAO
Cadmium, TCLP Leachate METHOD 7130	ND mg/L	0.03	12/27/91	JM
Chromium, TCLP Leachate METHOD 6010	ND mg/L	0.02	12/31/91	MM/DAO
Mercury, TCLP Leachate METHOD 7470	ND mg/L	0.002	12/30/91	JM
Acid Digestion - Microwave EPA CLP SOW	Complete		12/27/91	CG
Lead, TCLP Leachate METHOD 7420	ND mg/L	0.3	12/30/91	JM
TCLP Leachate extraction METHOD 1311	Complete		12/24/91	ET
Selenium, TCLP Leachate METHOD 7740	ND mg/L	0.007	01/06/92	WFL

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.



Certificate of Analysis No. F112409-06

Simon EEI - Toxcon Division
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

01/09/92

Project: 504867.00
Site: Baker Hughes
2800 West Marland
Hobbs, New Mexico
Sample No: B2: 5/6
Sample of: Soil
Sampled by: Simon EEI - Toxcon Division
Sample Date: 12/20/91 09:50:00

ANALYTICAL RESULTS

ANALYSIS/METHOD -----	RESULTS -----	DETECTION LIMIT -----
BENZENE Method-5030/8020 [SW846]	ND µg/Kg	1 µg/Kg
TOLUENE Method-5030/8020 [SW846]	1 µg/Kg	1 µg/Kg
ETHYLBENZENE Method-5030/8020 [SW846]	2 µg/Kg	1 µg/Kg
XYLENES Method-5030/8020 [SW846]	4 µg/Kg	1 µg/Kg
TOTAL PETROLEUM HYDROCARBONS Method-418.1	310 mg/Kg	10 mg/Kg

BTEX ANALYZED BY: LT
TPH ANALYZED BY: LB/JC/FM

DATE/TIME: 12/23/91
DATE/TIME: 12/27/91

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.
QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Incorporated

Shari L. Grice
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Simon EEI - Toxcon Division
3334 Richmond Ave.
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Houston, TX 77098
Attn: Roger Pokluda

F112409-06B
Invoice #: 405614
Report Date: 01/09/92

504867.00
B2: 5/6
Baker Hughes
2800 West Marland
Hobbs, New Mexico

Date Received: 12/21/91
Date Collected: 12/20/91 09:50:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Petroleum Hydrocarbons METHOD 418.1	310 mg/Kg	10	12/27/91	LB/JC/FM
pH METHOD 9045	8.85 pH units		12/24/91	KEW

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.

SPL ENVIRONMENTAL LABORATORIES, INC.



Simon EEI - Toxcon Division
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F112409-06C
Invoice #: 405614
Report Date: 01/09/92

504867.00
B2: 5/6
Baker Hughes
2800 West Marland
Hobbs, New Mexico

Date Received: 12/21/91
Date Collected: 12/20/91 09:50:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Silver, TCLP Leachate METHOD 7760	ND mg/L	0.02	12/27/91	JM
Arsenic, TCLP Leachate METHOD 7060	0.040 mg/L	0.007	01/04/92	WFL
Barium, TCLP Leachate METHOD 6010	0.68 mg/L	0.07	12/31/91	MM/DAO
Cadmium, TCLP Leachate METHOD 7130	ND mg/L	0.03	12/27/91	JM
Chromium, TCLP Leachate METHOD 6010	ND mg/L	0.02	12/31/91	MM/DAO
Mercury, TCLP Leachate METHOD 7470	ND mg/L	0.002	12/30/91	JM
Acid Digestion - Microwave EPA CLP SOW	Complete		12/27/91	CG
Lead, TCLP Leachate METHOD 7420	ND mg/L	0.3	12/30/91	JM
TCLP Leachate extraction METHOD 1311	Complete		12/24/91	ET
Selenium, TCLP Leachate METHOD 7740	ND mg/L	0.007	01/06/92	WFL

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.



Certificate of Analysis No. F112409-07

Simon EEI - Toxcon Division
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

01/09/92

Project: 504867.00
Site: Baker Hughes
2800 West Marland
Hobbs, New Mexico
Sample No: B2: 10/11
Sample of: Soil
Sampled by: Simon EEI - Toxcon Division
Sample Date: 12/20/91 10:00:00

A N A L Y T I C A L R E S U L T S

ANALYSIS/METHOD -----	RESULTS -----	DETECTION LIMIT -----
BENZENE Method-5030/8020 [SW846]	ND $\mu\text{g/Kg}$	1 $\mu\text{g/Kg}$
TOLUENE Method-5030/8020 [SW846]	1 $\mu\text{g/Kg}$	1 $\mu\text{g/Kg}$
ETHYLBENZENE Method-5030/8020 [SW846]	2 $\mu\text{g/Kg}$	1 $\mu\text{g/Kg}$
XYLENES Method-5030/8020 [SW846]	5 $\mu\text{g/Kg}$	1 $\mu\text{g/Kg}$
TOTAL PETROLEUM HYDROCARBONS Method-418.1	25 mg/Kg	10 mg/Kg

BTEX ANALYZED BY: LT
TPH ANALYZED BY: LB/JC/FM

DATE/TIME: 12/23/91
DATE/TIME: 12/27/91

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.
QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Incorporated

Shari L. Grice
Shari L. Grice



Simon EEI - Toxcon Division
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F112409-07B
Invoice #: 405614
Report Date: 01/09/92

504867.00
B2: 10/11
Baker Hughes
2800 West Marland
Hobbs, New Mexico

Date Received: 12/21/91
Date Collected: 12/20/91 10:00:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Petroleum Hydrocarbons METHOD 418.1	25 mg/Kg	10	12/27/91	LB/JC/FM
pH METHOD 9045	8.99 pH units		12/24/91	KEW

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.

SPL ENVIRONMENTAL LABORATORIES, INC.



Simon EEI - Toxcon Division
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F112409-07C
Invoice #: 405614
Report Date: 01/09/92

504867.00
B2: 10/11
Baker Hughes
2800 West Marland
Hobbs, New Mexico

Date Received: 12/21/91
Date Collected: 12/20/91 10:00:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Silver, TCLP Leachate METHOD 7760	ND mg/L	0.02	12/27/91	JM
Arsenic, TCLP Leachate METHOD 7060	0.030 mg/L	0.007	01/04/92	WFL
Barium, TCLP Leachate METHOD 6010	0.56 mg/L	0.07	12/31/91	MM/DAO
Cadmium, TCLP Leachate METHOD 7130	ND mg/L	0.03	12/27/91	JM
Chromium, TCLP Leachate METHOD 6010	ND mg/L	0.02	12/31/91	MM/DAO
Mercury, TCLP Leachate METHOD 7470	ND mg/L	0.002	12/30/91	JM
Acid Digestion - Microwave EPA CLP SOW	Complete		12/27/91	CG
Lead, TCLP Leachate METHOD 7420	ND mg/L	0.3	12/30/91	JM
TCLP Leachate extraction METHOD 1311	Complete		12/24/91	ET
Selenium, TCLP Leachate METHOD 7740	ND mg/L	0.007	01/06/92	WFL

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.



Certificate of Analysis No. F112409-08

Simon EEI - Toxcon Division
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

01/09/92

Project: 504867.00
Site: Baker Hughes
2800 West Marland
Hobbs, New Mexico
Sample No: B3: 5/6
Sample of: Soil
Sampled by: Simon EEI - Toxcon Division
Sample Date: 12/20/91 11:05:00

A N A L Y T I C A L R E S U L T S

ANALYSIS/METHOD -----	RESULTS -----		DETECTION LIMIT -----	
BENZENE Method-5030/8020 [SW846]	ND	µg/Kg	1	µg/Kg
TOLUENE Method-5030/8020 [SW846]	1	µg/Kg	1	µg/Kg
ETHYLBENZENE Method-5030/8020 [SW846]	ND	µg/Kg	1	µg/Kg
XYLENES Method-5030/8020 [SW846]	4	µg/Kg	1	µg/Kg
TOTAL PETROLEUM HYDROCARBONS Method-418.1	74	mg/Kg	10	mg/Kg

BTEX ANALYZED BY: LT
TPH ANALYZED BY: LB/JC/FM

DATE/TIME: 12/23/91
DATE/TIME: 12/27/91

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.
QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Incorporated

Shari L. Grice
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Simon EEI - Toxcon Division
3334 Richmond Ave.
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Houston, TX 77098
Attn: Roger Pokluda

F112409-08B
Invoice #: 405614
Report Date: 01/09/92

504867.00
B3: 5/6
Baker Hughes
2800 West Marland
Hobbs, New Mexico

Date Received: 12/21/91
Date Collected: 12/20/91 11:05:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Petroleum Hydrocarbons METHOD 418.1	74 mg/Kg	10	12/27/91	LB/JC/FM
pH METHOD 9045	8.65 pH units		12/24/91	KEW

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.

SPL ENVIRONMENTAL LABORATORIES, INC.



Simon EEI - Toxcon Division
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F112409-08C
Invoice #: 405614
Report Date: 01/09/92

504867.00
B3: 5/6
Baker Hughes
2800 West Marland
Hobbs, New Mexico

Date Received: 12/21/91
Date Collected: 12/20/91 11:05:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Silver, TCLP Leachate METHOD 7760	ND mg/L	0.02	12/27/91	JM
Arsenic, TCLP Leachate METHOD 7060	0.042 mg/L	0.007	01/04/92	WFL
Barium, TCLP Leachate METHOD 6010	0.76 mg/L	0.07	12/31/91	MM/DAO
Cadmium, TCLP Leachate METHOD 7130	ND mg/L	0.03	12/27/91	JM
Chromium, TCLP Leachate METHOD 6010	ND mg/L	0.02	12/31/91	MM/DAO
Mercury, TCLP Leachate METHOD 7470	ND mg/L	0.002	12/30/91	JM
Acid Digestion - Microwave EPA CLP SOW	Complete		12/27/91	CG
Lead, TCLP Leachate METHOD 7420	ND mg/L	0.3	12/30/91	JM
TCLP Leachate extraction METHOD 1311	Complete		12/24/91	ET
Selenium, TCLP Leachate METHOD 7740	ND mg/L	0.007	01/06/92	WFL

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.



Certificate of Analysis No. F112409-09

Simon EEI - Toxcon Division
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

01/09/92

Project: 504867.00
Site: Baker Hughes
2800 West Marland
Hobbs, New Mexico
Sample No: B3: 10/11
Sample of: Soil
Sampled by: Simon EEI - Toxcon Division
Sample Date: 12/20/91 11:25:00

A N A L Y T I C A L R E S U L T S

ANALYSIS/METHOD	RESULTS		DETECTION LIMIT	
BENZENE	ND	µg/Kg	1	µg/Kg
Method-5030/8020 [SW846]				
TOLUENE	3	µg/Kg	1	µg/Kg
Method-5030/8020 [SW846]				
ETHYLBENZENE	8	µg/Kg	1	µg/Kg
Method-5030/8020 [SW846]				
XYLENES	37	µg/Kg	1	µg/Kg
Method-5030/8020 [SW846]				
TOTAL PETROLEUM HYDROCARBONS	58	mg/Kg	10	mg/Kg
Method-418.1				

BTEX ANALYZED BY: LT
TPH ANALYZED BY: LB/JC/FM

DATE/TIME: 12/23/91
DATE/TIME: 12/27/91

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.
QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Incorporated

Shari L. Grice
Shari L. Grice



Simon EEI - Toxcon Division
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F112409-09B
Invoice #: 405614
Report Date: 01/09/92

504867.00
B3: 10/11
Baker Hughes
2800 West Marland
Hobbs, New Mexico

Date Received: 12/21/91
Date Collected: 12/20/91 11:25:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Petroleum Hydrocarbons METHOD 418.1	58 mg/Kg	10	12/27/91	LB/JC/FM
pH METHOD 9045	9.00 pH units		12/24/91	KEW

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.

SPL ENVIRONMENTAL LABORATORIES, INC.



Simon EEI - Toxcon Division
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F112409-09C
Invoice #: 405614
Report Date: 01/09/92

504867.00
B3: 10/11
Baker Hughes
2800 West Marland
Hobbs, New Mexico

Date Received: 12/21/91
Date Collected: 12/20/91 11:25:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Silver, TCLP Leachate METHOD 7760	ND mg/L	0.02	12/27/91	JM
Arsenic, TCLP Leachate METHOD 7060	0.017 mg/L	0.007	01/04/92	WFL
Barium, TCLP Leachate METHOD 6010	0.68 mg/L	0.07	12/31/91	MM/DAO
Cadmium, TCLP Leachate METHOD 7130	ND mg/L	0.03	12/27/91	JM
Chromium, TCLP Leachate METHOD 6010	ND mg/L	0.02	12/31/91	MM/DAO
Mercury, TCLP Leachate METHOD 7470	ND mg/L	0.002	12/30/91	JM
Acid Digestion - Microwave EPA CLP SOW	Complete		12/27/91	CG
Lead, TCLP Leachate METHOD 7420	ND mg/L	0.3	12/30/91	JM
TCLP Leachate extraction METHOD 1311	Complete		12/24/91	ET
Selenium, TCLP Leachate METHOD 7740	ND mg/L	0.007	01/07/92	DAO

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.



Certificate of Analysis No. F112409-10

Simon EEI - Toxcon Division
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

01/09/92

Project: 504867.00
Site: Baker Hughes
2800 West Marland
Hobbs, New Mexico
Sample No: B4: 5/6
Sample of: Soil
Sampled by: Simon EEI - Toxcon Division
Sample Date: 12/20/91 10:40:00

A N A L Y T I C A L R E S U L T S

ANALYSIS/METHOD	RESULTS		DETECTION LIMIT	
BENZENE	ND	µg/Kg	1	µg/Kg
Method-5030/8020 [SW846]				
TOLUENE	11	µg/Kg	1	µg/Kg
Method-5030/8020 [SW846]				
ETHYLBENZENE	10	µg/Kg	1	µg/Kg
Method-5030/8020 [SW846]				
XYLENES	40	µg/Kg	1	µg/Kg
Method-5030/8020 [SW846]				
TOTAL PETROLEUM HYDROCARBONS	220	mg/Kg	10	mg/Kg
Method-418.1				

BTEX ANALYZED BY: LT
TPH ANALYZED BY: LB/JC/FM

DATE/TIME: 12/23/91
DATE/TIME: 12/27/91

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.
QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Incorporated

Shari L. Grice
Shari L. Grice



Simon EEI - Toxcon Division
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F112409-10B
Invoice #: 405614
Report Date: 01/09/92

504867.00
B4: 5/6
Baker Hughes
2800 West Marland
Hobbs, New Mexico

Date Received: 12/21/91
Date Collected: 12/20/91 10:40:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Petroleum Hydrocarbons METHOD 418.1	220 mg/Kg	10	12/27/91	LB/JC/FM
pH METHOD 9045	8.43 pH units		12/24/91	KEW

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.

SPL ENVIRONMENTAL LABORATORIES, INC.



Simon EEI - Toxcon Division
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F112409-10C
Invoice #: 405614
Report Date: 01/09/92

504867.00
B4: 5/6
Baker Hughes
2800 West Marland
Hobbs, New Mexico

Date Received: 12/21/91
Date Collected: 12/20/91 10:40:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Silver, TCLP Leachate METHOD 7760	ND mg/L	0.02	12/27/91	JM
Arsenic, TCLP Leachate METHOD 7060	0.039 mg/L	0.007	01/04/92	WFL
Barium, TCLP Leachate METHOD 6010	0.67 mg/L	0.07	12/31/91	MM/DAO
Cadmium, TCLP Leachate METHOD 7130	ND mg/L	0.03	12/27/91	JM
Chromium, TCLP Leachate METHOD 6010	ND mg/L	0.02	12/31/91	MM/DAO
Mercury, TCLP Leachate METHOD 7470	ND mg/L	0.002	12/30/91	JM
Acid Digestion - Microwave EPA CLP SOW	Complete		12/27/91	CG
Lead, TCLP Leachate METHOD 7420	ND mg/L	0.3	12/30/91	JM
TCLP Leachate extraction METHOD 1311	Complete		12/24/91	ET
Selenium, TCLP Leachate METHOD 7740	ND mg/L	0.03	01/07/92	DAO

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.



Certificate of Analysis No. F112409-11

Simon EEI - Toxcon Division
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

01/09/92

Project: 504867.00
Site: Baker Hughes
2800 West Marland
Hobbs, New Mexico
Sample No: B4: 10/11
Sample of: Soil
Sampled by: Simon EEI - Toxcon Division
Sample Date: 12/20/91 10:45:00

A N A L Y T I C A L R E S U L T S

ANALYSIS/METHOD -----	RESULTS -----	DETECTION LIMIT -----
BENZENE Method-5030/8020 [SW846]	ND $\mu\text{g/Kg}$	1 $\mu\text{g/Kg}$
TOLUENE Method-5030/8020 [SW846]	2 $\mu\text{g/Kg}$	1 $\mu\text{g/Kg}$
ETHYLBENZENE Method-5030/8020 [SW846]	2 $\mu\text{g/Kg}$	1 $\mu\text{g/Kg}$
XYLENES Method-5030/8020 [SW846]	2 $\mu\text{g/Kg}$	1 $\mu\text{g/Kg}$
TOTAL PETROLEUM HYDROCARBONS Method-418.1	97 mg/Kg	10 mg/Kg

BTEX ANALYZED BY: LT
TPH ANALYZED BY: LB/JC/FM

DATE/TIME: 12/23/91
DATE/TIME: 12/27/91

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.
QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Incorporated

Shari L. Grice
Shari L. Grice



Simon EEI - Toxcon Division
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Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F112409-11B
Invoice #: 405614
Report Date: 01/09/92

504867.00
B4: 10/11
Baker Hughes
2800 West Marland
Hobbs, New Mexico

Date Received: 12/21/91
Date Collected: 12/20/91 10:45:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Petroleum Hydrocarbons METHOD 418.1	97 mg/Kg	10	12/27/91	LB/JC/FM
pH METHOD 9045	9.21 pH units		12/24/91	KEW

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.

SPL ENVIRONMENTAL LABORATORIES, INC.



Simon EEI - Toxcon Division
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F112409-11C
Invoice #: 405614
Report Date: 01/09/92

504867.00
B4: 10/11
Baker Hughes
2800 West Marland
Hobbs, New Mexico

Date Received: 12/21/91
Date Collected: 12/20/91 10:45:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Silver, TCLP Leachate METHOD 7760	ND mg/L	0.02	12/27/91	JM
Arsenic, TCLP Leachate METHOD 7060	0.032 mg/L	0.007	01/04/92	WFL
Barium, TCLP Leachate METHOD 6010	0.69 mg/L	0.07	12/31/91	MM/DAO
Cadmium, TCLP Leachate METHOD 7130	ND mg/L	0.03	12/27/91	JM
Chromium, TCLP Leachate METHOD 6010	ND mg/L	0.02	12/31/91	MM/DAO
Mercury, TCLP Leachate METHOD 7470	ND mg/L	0.002	12/30/91	JM
Acid Digestion - Microwave EPA CLP SOW	Complete		12/27/91	CG
Lead, TCLP Leachate METHOD 7420	ND mg/L	0.3	12/30/91	JM
TCLP Leachate extraction METHOD 1311	Complete		12/24/91	ET
Selenium, TCLP Leachate METHOD 7740	ND mg/L	0.007	01/07/92	DAO

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.



Certificate of Analysis No. F112409-13

Simon EEI - Toxcon Division
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

01/09/92

Project: 504867.00
Site: Baker Hughes
2800 West Marland
Hobbs, New Mexico
Sample No: B5: 11/12
Sample of: Soil
Sampled by: Simon EEI - Toxcon Division
Sample Date: 12/20/91 12:15:00

A N A L Y T I C A L R E S U L T S

ANALYSIS/METHOD	RESULTS		DETECTION LIMIT	
-----	-----		-----	
BENZENE Method-5030/8020 [SW846]	ND	µg/Kg	5	µg/Kg
TOLUENE Method-5030/8020 [SW846]	28	µg/Kg	5	µg/Kg
ETHYLBENZENE Method-5030/8020 [SW846]	860	µg/Kg	5	µg/Kg
XYLENES Method-5030/8020 [SW846]	880	µg/Kg	5	µg/Kg
TOTAL PETROLEUM HYDROCARBONS Method-418.1	2100	mg/Kg	10	mg/Kg

BTEX ANALYZED BY: LT
TPH ANALYZED BY: LB/JC/FM

DATE/TIME: 12/23/91
DATE/TIME: 12/27/91

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.
QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Incorporated

Shari L. Grice
Shari L. Grice



Simon EEI - Toxcon Division
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F112409-13B
Invoice #: 405614
Report Date: 01/09/92

504867.00
B5: 11/12
Baker Hughes
2800 West Marland
Hobbs, New Mexico

Date Received: 12/21/91
Date Collected: 12/20/91 12:15:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Petroleum Hydrocarbons METHOD 418.1	2100 mg/Kg	10	12/27/91	LB/JC/FM
pH METHOD 9045	9.30 pH units		12/24/91	KEW

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.

SPL ENVIRONMENTAL LABORATORIES, INC.



Simon EEI - Toxcon Division
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F112409-13C
Invoice #: 405614
Report Date: 01/09/92

504867.00
B5: 11/12
Baker Hughes
2800 West Marland
Hobbs, New Mexico

Date Received: 12/21/91
Date Collected: 12/20/91 12:15:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Silver, TCLP Leachate METHOD 7760	ND mg/L	0.02	12/27/91	JM
Arsenic, TCLP Leachate METHOD 7060	ND mg/L	0.007	01/04/92	WFL
Barium, TCLP Leachate METHOD 6010	1.64 mg/L	0.07	12/31/91	MM/DAO
Cadmium, TCLP Leachate METHOD 7130	ND mg/L	0.03	12/27/91	JM
Chromium, TCLP Leachate METHOD 6010	ND mg/L	0.02	12/31/91	MM/DAO
Mercury, TCLP Leachate METHOD 7470	ND mg/L	0.002	12/30/91	JM
Acid Digestion - Microwave EPA CLP SOW	Complete		12/27/91	CG
Lead, TCLP Leachate METHOD 7420	ND mg/L	0.3	12/30/91	JM
TCLP Leachate extraction METHOD 1311	Complete		12/24/91	ET
Selenium, TCLP Leachate METHOD 7740	ND mg/L	0.007	01/07/92	DAO

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.



Certificate of Analysis No. F112409-14

Simon EEI - Toxcon Division
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

01/09/92

Project: 504867.00
Site: Baker Hughes
2800 West Marland
Hobbs, New Mexico
Sample No: B6: 9.5/10.5
Sample of: Soil
Sampled by: Simon EEI - Toxcon Division
Sample Date: 12/20/91 13:25:00

A N A L Y T I C A L R E S U L T S

ANALYSIS/METHOD	RESULTS		DETECTION LIMIT	
-----	-----	-----	-----	-----
BENZENE Method-5030/8020 [SW846]	ND	µg/Kg	5	µg/Kg
TOLUENE Method-5030/8020 [SW846]	12	µg/Kg	5	µg/Kg
ETHYLBENZENE Method-5030/8020 [SW846]	290	µg/Kg	5	µg/Kg
XYLENES Method-5030/8020 [SW846]	74	µg/Kg	5	µg/Kg
TOTAL PETROLEUM HYDROCARBONS Method-418.1	2800	mg/Kg	50	mg/Kg

BTEX ANALYZED BY: LT

DATE/TIME: 12/23/91

TPH ANALYZED BY: LB/JC/FM

DATE/TIME: 12/27/91

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Incorporated

Shari L. Grice
Shari L. Grice



Simon EEI - Toxcon Division
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F112409-14B
Invoice #: 405614
Report Date: 01/09/92

504867.00
B6: 9.5/10.5
Baker Hughes
2800 West Marland
Hobbs, New Mexico

Date Received: 12/21/91
Date Collected: 12/20/91 13:25:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Petroleum Hydrocarbons METHOD 418.1	2800 mg/Kg	50	12/27/91	LB/JC/FM
pH METHOD 9045	8.85 pH units		12/24/91	KEW

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.

SPL ENVIRONMENTAL LABORATORIES, INC.



Simon EEI - Toxcon Division
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F112409-14C
Invoice #: 405614
Report Date: 01/09/92

504867.00
B6: 9.5/10.5
Baker Hughes
2800 West Marland
Hobbs, New Mexico

Date Received: 12/21/91
Date Collected: 12/20/91 13:25:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Silver, TCLP Leachate METHOD 7760	ND mg/L	0.02	12/27/91	JM
Arsenic, TCLP Leachate METHOD 7060	0.012 mg/L	0.007	01/04/92	WFL
Barium, TCLP Leachate METHOD 6010	1.61 mg/L	0.07	12/31/91	MM/DAO
Cadmium, TCLP Leachate METHOD 7130	ND mg/L	0.03	12/27/91	JM
Chromium, TCLP Leachate METHOD 6010	ND mg/L	0.02	12/31/91	MM/DAO
Mercury, TCLP Leachate METHOD 7470	ND mg/L	0.002	12/30/91	JM
Acid Digestion - Microwave EPA CLP SOW	Complete		12/27/91	CG
Lead, TCLP Leachate METHOD 7420	ND mg/L	0.3	12/30/91	JM
TCLP Leachate extraction METHOD 1311	Complete		12/24/91	ET
Selenium, TCLP Leachate METHOD 7740	ND mg/L	0.007	01/07/92	DAO

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.



Certificate of Analysis No. F112409-15

Simon EEI - Toxcon Division
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

01/09/92

Project: 504867.00
Site: Baker Hughes
2800 West Marland
Hobbs, New Mexico
Sample No: B6: 14.5/15.5
Sample of: Soil
Sampled by: Simon EEI - Toxcon Division
Sample Date: 12/20/91 13:40:00

A N A L Y T I C A L R E S U L T S

ANALYSIS/METHOD -----	RESULTS -----	DETECTION LIMIT -----
BENZENE Method-5030/8020 [SW846]	ND $\mu\text{g/Kg}$	5 $\mu\text{g/Kg}$
TOLUENE Method-5030/8020 [SW846]	12 $\mu\text{g/Kg}$	5 $\mu\text{g/Kg}$
ETHYLBENZENE Method-5030/8020 [SW846]	230 $\mu\text{g/Kg}$	5 $\mu\text{g/Kg}$
XYLENES Method-5030/8020 [SW846]	52 $\mu\text{g/Kg}$	5 $\mu\text{g/Kg}$
TOTAL PETROLEUM HYDROCARBONS Method-418.1	5200 mg/Kg	100 mg/Kg

BTEX ANALYZED BY: LT DATE/TIME: 12/23/91
TPH ANALYZED BY: LB/JC/FM DATE/TIME: 12/27/91

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.
QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Incorporated

Shari L. Grice
Shari L. Grice



Simon EEI - Toxcon Division
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F112409-15B
Invoice #: 405614
Report Date: 01/09/92

504867.00
B6: 14.5/15.5
Baker Hughes
2800 West Marland
Hobbs, New Mexico

Date Received: 12/21/91
Date Collected: 12/20/91 13:40:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Petroleum Hydrocarbons METHOD 418.1	5200 mg/Kg	100	12/27/91	LB/JC/FM
pH METHOD 9045	9.24 pH units		12/24/91	KEW

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.

SPL ENVIRONMENTAL LABORATORIES, INC.



Simon EEI - Toxcon Division
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F112409-15C
Invoice #: 405614
Report Date: 01/09/92

504867.00
B6: 14.5/15.5
Baker Hughes
2800 West Marland
Hobbs, New Mexico

Date Received: 12/21/91
Date Collected: 12/20/91 13:40:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Silver, TCLP Leachate METHOD 7760	ND mg/L	0.02	12/27/91	JM
Arsenic, TCLP Leachate METHOD 7060	ND mg/L	0.007	01/04/92	WFL
Barium, TCLP Leachate METHOD 6010	2.73 mg/L	0.07	12/31/91	MM/DAO
Cadmium, TCLP Leachate METHOD 7130	ND mg/L	0.03	12/27/91	JM
Chromium, TCLP Leachate METHOD 6010	ND mg/L	0.02	12/31/91	MM/DAO
Mercury, TCLP Leachate METHOD 7470	ND mg/L	0.002	12/30/91	JM
Acid Digestion - Microwave EPA CLP SOW	Complete		12/27/91	CG
Lead, TCLP Leachate METHOD 7420	ND mg/L	0.3	12/30/91	JM
TCLP Leachate extraction METHOD 1311	Complete		12/24/91	ET
Selenium, TCLP Leachate METHOD 7740	ND mg/L	0.007	01/07/92	DAO

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.



Certificate of Analysis No. F112409-16

Simon EEI - Toxcon Division
3334 Richmond Ave.,
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

01/09/92

Project: 504867.00
Site: Baker Hughes
2800 West Marland
Hobbs, New Mexico
Sample No: BG1: 0/1
Sample of: Soil
Sampled by: Simon EEI - Toxcon Division
Sample Date: 12/20/91 11:15:00

A N A L Y T I C A L R E S U L T S

ANALYSIS/METHOD -----	RESULTS -----	DETECTION LIMIT -----
BENZENE Method-5030/8020 [SW846]	ND $\mu\text{g/Kg}$	1 $\mu\text{g/Kg}$
TOLUENE Method-5030/8020 [SW846]	ND $\mu\text{g/Kg}$	1 $\mu\text{g/Kg}$
ETHYLBENZENE Method-5030/8020 [SW846]	2 $\mu\text{g/Kg}$	1 $\mu\text{g/Kg}$
XYLENES Method-5030/8020 [SW846]	2 $\mu\text{g/Kg}$	1 $\mu\text{g/Kg}$
TOTAL PETROLEUM HYDROCARBONS Method-418.1	ND mg/Kg	10 mg/Kg

BTEX ANALYZED BY: LT DATE/TIME: 12/23/91
TPH ANALYZED BY: LB/JC/FM DATE/TIME: 12/27/91

ND = Parameter analyzed for but not detected. The reported limit
is the minimum attainable detection limit for the sample.
QUALITY ASSURANCE: These analyses are performed in accordance
with EPA guidelines for quality assurance.

SPL, Incorporated

Shari L. Grice
Shari L. Grice



Simon EEI - Toxcon Division
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F112409-16B
Invoice #: 405614
Report Date: 01/09/92

504867.00
BG1: 0/1
Baker Hughes
2800 West Marland
Hobbs, New Mexico

Date Received: 12/21/91
Date Collected: 12/20/91 11:15:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Petroleum Hydrocarbons METHOD 418.1	ND mg/Kg	10	12/27/91	LB/JC/FM
pH METHOD 9045	9.07 pH units		12/24/91	KEW

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.

SPL ENVIRONMENTAL LABORATORIES, INC.



Simon EEI - Toxcon Division
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F112409-16C
Invoice #: 405614
Report Date: 01/09/92

504867.00
BG1: 0/1
Baker Hughes
2800 West Marland
Hobbs, New Mexico

Date Received: 12/21/91
Date Collected: 12/20/91 11:15:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Silver, TCLP Leachate METHOD 7760	ND mg/L	0.02	12/27/91	JM
Arsenic, TCLP Leachate METHOD 7060	0.009 mg/L	0.007	01/04/92	WFL
Barium, TCLP Leachate METHOD 6010	1.63 mg/L	0.07	12/31/91	MM/DAO
Cadmium, TCLP Leachate METHOD 7130	ND mg/L	0.03	12/27/91	JM
Chromium, TCLP Leachate METHOD 6010	ND mg/L	0.02	12/31/91	MM/DAO
Mercury, TCLP Leachate METHOD 7470	ND mg/L	0.002	12/30/91	JM
Acid Digestion - Microwave EPA CLP SOW	Complete		12/27/91	CG
Lead, TCLP Leachate METHOD 7420	ND mg/L	0.3	12/30/91	JM
TCLP Leachate extraction METHOD 1311	Complete		12/24/91	ET
Selenium, TCLP Leachate METHOD 7740	ND mg/L	0.007	01/07/92	DAO

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.



Certificate of Analysis No. F112409-17

Simon EEI - Toxcon Division
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

01/09/92

Project: 504867.00
Site: Baker Hughes
2800 West Marland
Hobbs, New Mexico
Sample No: BG2: 0/1
Sample of: Soil
Sampled by: Simon EEI - Toxcon Division
Sample Date: 12/20/91 10:45:00

A N A L Y T I C A L R E S U L T S

ANALYSIS/METHOD -----	RESULTS -----	DETECTION LIMIT -----
BENZENE Method-5030/8020 [SW846]	ND $\mu\text{g/Kg}$	1 $\mu\text{g/Kg}$
TOLUENE Method-5030/8020 [SW846]	ND $\mu\text{g/Kg}$	1 $\mu\text{g/Kg}$
ETHYLBENZENE Method-5030/8020 [SW846]	ND $\mu\text{g/Kg}$	1 $\mu\text{g/Kg}$
XYLENES Method-5030/8020 [SW846]	1 $\mu\text{g/Kg}$	1 $\mu\text{g/Kg}$
TOTAL PETROLEUM HYDROCARBONS Method-418.1	ND mg/Kg	10 mg/Kg

BTEX ANALYZED BY: LT DATE/TIME: 12/23/91
TPH ANALYZED BY: LB/JC/FM DATE/TIME: 12/27/91

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.
QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Incorporated

Shari L. Grice
Shari L. Grice



Simon EEI - Toxcon Division
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F112409-17B
Invoice #: 405614
Report Date: 01/09/92

504867.00
BG2: 0/1
Baker Hughes
2800 West Marland
Hobbs, New Mexico

Date Received: 12/21/91
Date Collected: 12/20/91 10:45:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Petroleum Hydrocarbons METHOD 418.1	ND mg/Kg	10	12/27/91	LB/JC/FM
pH METHOD 9045	8.82 pH units		12/24/91	KEW

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.

SPL ENVIRONMENTAL LABORATORIES, INC.



Simon EEI - Toxcon Division
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F112409-17C
Invoice #: 405614
Report Date: 01/09/92

504867.00
BG2: 0/1
Baker Hughes
2800 West Marland
Hobbs, New Mexico

Date Received: 12/21/91
Date Collected: 12/20/91 10:45:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Silver, TCLP Leachate METHOD 7760	ND mg/L	0.02	12/27/91	JM
Arsenic, TCLP Leachate METHOD 7060	ND mg/L	0.007	01/04/92	WFL
Barium, TCLP Leachate METHOD 6010	0.91 mg/L	0.07	12/31/91	MM/DAO
Cadmium, TCLP Leachate METHOD 7130	ND mg/L	0.03	12/27/91	JM
Chromium, TCLP Leachate METHOD 6010	ND mg/L	0.02	12/31/91	MM/DAO
Mercury, TCLP Leachate METHOD 7470	ND mg/L	0.002	12/30/91	JM
Acid Digestion - Microwave EPA CLP SOW	Complete		12/26/91	CG
Lead, TCLP Leachate METHOD 7420	ND mg/L	0.3	12/27/91	JM
TCLP Leachate extraction METHOD 1311	Complete		12/24/91	ET
Selenium, TCLP Leachate METHOD 7740	ND mg/L	0.007	01/07/92	DAO

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.



Certificate of Analysis No. F112409-18

Simon EEI - Toxcon Division
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

01/09/92

Project: 504867.00
Site: Baker Hughes
2800 West Marland
Hobbs, New Mexico
Sample No: BG3: 0/1
Sample of: Soil
Sampled by: Simon EEI - Toxcon Division
Sample Date: 12/20/91 10:15:00

A N A L Y T I C A L R E S U L T S

ANALYSIS/METHOD -----	RESULTS -----		DETECTION LIMIT -----	
BENZENE Method-5030/8020 [SW846]	ND	µg/Kg	1	µg/Kg
TOLUENE Method-5030/8020 [SW846]	1	µg/Kg	1	µg/Kg
ETHYLBENZENE Method-5030/8020 [SW846]	1	µg/Kg	1	µg/Kg
XYLENES Method-5030/8020 [SW846]	4	µg/Kg	1	µg/Kg
TOTAL PETROLEUM HYDROCARBONS Method-418.1	12	mg/Kg	10	mg/Kg

BTEX ANALYZED BY: LT
TPH ANALYZED BY: LB/JC/FM

DATE/TIME: 12/23/91
DATE/TIME: 12/27/91

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.
QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Incorporated

Shari L. Grice
Shari L. Grice



Simon EEI - Toxcon Division
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F112409-18B
Invoice #: 405614
Report Date: 01/09/92

504867.00
BG3: 0/1
Baker Hughes
2800 West Marland
Hobbs, New Mexico

Date Received: 12/21/91
Date Collected: 12/20/91 10:15:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Petroleum Hydrocarbons METHOD 418.1	12 mg/Kg	10	12/27/91	LB/JC/FM
pH METHOD 9045	8.99 pH units		12/24/91	KEW

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.

SPL ENVIRONMENTAL LABORATORIES, INC.



Simon EEI - Toxcon Division
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F112409-18C
Invoice #: 405614
Report Date: 01/09/92

504867.00
BG3: 0/1
Baker Hughes
2800 West Marland
Hobbs, New Mexico

Date Received: 12/21/91
Date Collected: 12/20/91 10:15:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Silver, TCLP Leachate METHOD 7760	ND mg/L	0.02	12/27/91	JM
Arsenic, TCLP Leachate METHOD 7060	ND mg/L	0.007	01/04/92	WFL
Barium, TCLP Leachate METHOD 6010	1.08 mg/L	0.07	12/31/91	MM/DAO
Cadmium, TCLP Leachate METHOD 7130	ND mg/L	0.03	12/27/91	JM
Chromium, TCLP Leachate METHOD 6010	ND mg/L	0.02	12/31/91	MM/DAO
Mercury, TCLP Leachate METHOD 7470	ND mg/L	0.002	12/30/91	JM
Acid Digestion - Microwave EPA CLP SOW	Complete		12/26/91	CG
Lead, TCLP Leachate METHOD 7420	ND mg/L	0.3	12/27/91	JM
TCLP Leachate extraction METHOD 1311	Complete		12/24/91	ET
Selenium, TCLP Leachate METHOD 7740	ND mg/L	0.007	01/07/92	DAO

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.



Certificate of Analysis No. F112410-01

Simon EEI - Toxcon Division
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

01/09/92

Project: 504867.00
Site: Baker Hughes
2800 West Marland
Hobbs, New Mexico
Sample No: BG4: 0/1
Sample of: Soil
Sampled by: Simon EEI - Toxcon Division
Sample Date: 12/20/91 10:05:00

A N A L Y T I C A L R E S U L T S

ANALYSIS/METHOD	RESULTS	DETECTION LIMIT
BENZENE Method-5030/8020 [SW846]	ND $\mu\text{g/Kg}$	1 $\mu\text{g/Kg}$
TOLUENE Method-5030/8020 [SW846]	2 $\mu\text{g/Kg}$	1 $\mu\text{g/Kg}$
ETHYLBENZENE Method-5030/8020 [SW846]	2 $\mu\text{g/Kg}$	1 $\mu\text{g/Kg}$
XYLENES Method-5030/8020 [SW846]	12 $\mu\text{g/Kg}$	1 $\mu\text{g/Kg}$
TOTAL PETROLEUM HYDROCARBONS Method-418.1	34 mg/Kg	10 mg/Kg

BTEX ANALYZED BY: LT
TPH ANALYZED BY: LB/FM/JC

DATE/TIME: 12/22/91
DATE/TIME: 12/27/91

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.
QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Incorporated

Shari L. Grice
Shari L. Grice



Simon EEI - Toxcon Division
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F112410-01C
Invoice #: 405614
Report Date: 01/09/92

504867.00
BG4: 0/1
Baker Hughes
2800 West Marland
Hobbs, New Mexico

Date Received: 12/21/91
Date Collected: 12/20/91 10:05:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Silver, TCLP Leachate METHOD 7760	ND mg/L	0.02	12/31/91	JM
Arsenic, TCLP Leachate METHOD 7060	0.013 mg/L	0.007	01/04/92	WFL
Barium, TCLP Leachate METHOD 6010	0.68 mg/L	0.07	12/31/91	MM/DAO
Cadmium, TCLP Leachate METHOD 7130	ND mg/L	0.03	12/31/91	JM
Chromium, TCLP Leachate METHOD 6010	ND mg/L	0.02	12/31/91	MM/DAO
Mercury, TCLP Leachate METHOD 7470	ND mg/L	0.002	12/30/91	JM
Acid Digestion - Microwave EPA CLP SOW	Complete		12/30/91	CG
Lead, TCLP Leachate METHOD 7420	ND mg/L	0.3	12/31/91	JM
TCLP Leachate extraction METHOD 1311	Complete		12/28/91	ET
Selenium, TCLP Leachate METHOD 7740	ND mg/L	0.007	01/06/92	WFL

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.



Simon EEI - Toxcon Division
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F112410-01B
Invoice #: 405614
Report Date: 01/09/92

504867.00
BG4: 0/1
Baker Hughes
2800 West Marland
Hobbs, New Mexico

Date Received: 12/21/91
Date Collected: 12/20/91 10:05:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Petroleum Hydrocarbons METHOD 418.1	34 mg/Kg	10	12/27/91	LB/FM/JC
pH METHOD 9045	9.29 pH units		12/24/91	KEW

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.

SPL ENVIRONMENTAL LABORATORIES, INC.



Certificate of Analysis No. F112410-03

Simon EEI - Toxcon Division
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

01/09/92

Project: 504867.00
Site: Baker Hughes
2800 West Marland
Hobbs, New Mexico
Sample No: B5: 15/16.5
Sample of: Soil
Sampled by: Simon EEI - Toxcon Division
Sample Date: 12/20/91 12:50:00

A N A L Y T I C A L R E S U L T S

ANALYSIS/METHOD -----	RESULTS -----		DETECTION LIMIT -----	
BENZENE Method-5030/8020 [SW846]	74	µg/Kg	50	µg/Kg
TOLUENE Method-5030/8020 [SW846]	87	µg/Kg	50	µg/Kg
ETHYLBENZENE Method-5030/8020 [SW846]	2000	µg/Kg	50	µg/Kg
XYLENES Method-5030/8020 [SW846]	2600	µg/Kg	50	µg/Kg
TOTAL PETROLEUM HYDROCARBONS Method-418.1	3800	mg/Kg	100	mg/Kg

BTEX ANALYZED BY: LT
TPH ANALYZED BY: LB/FM/JC

DATE/TIME: 12/24/91
DATE/TIME: 12/27/91

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.
QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Incorporated

Shari L. Grice
Shari L. Grice



Simon EEI - Toxcon Division
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F112410-03B
Invoice #: 405614
Report Date: 01/09/92

504867.00
B5: 15/16.5
Baker Hughes
2800 West Marland
Hobbs, New Mexico

Date Received: 12/21/91
Date Collected: 12/20/91 12:50:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Petroleum Hydrocarbons METHOD 418.1	3800 mg/Kg	100	12/27/91	LB/FM/JC
pH METHOD 9045	8.56 pH units		12/24/91	KEW

SPL ENVIRONMENTAL LABORATORIES, INC.



Simon EEI - Toxcon Division
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F112410-03C
Invoice #: 405614
Report Date: 01/09/92

504867.00
B5: 15/16.5
Baker Hughes
2800 West Marland
Hobbs, New Mexico

Date Received: 12/21/91
Date Collected: 12/20/91 12:50:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Silver, TCLP Leachate METHOD 7760	ND mg/L	0.02	01/03/92	JM
Arsenic, TCLP Leachate METHOD 7060	ND mg/L	0.007	01/04/92	WFL
Barium, TCLP Leachate METHOD 6010	2.11 mg/L	0.07	01/04/92	DAO
Cadmium, TCLP Leachate METHOD 7130	ND mg/L	0.03	01/03/92	JM
Chromium, TCLP Leachate METHOD 6010	ND mg/L	0.02	01/06/92	DQ
Mercury, TCLP Leachate METHOD 7470	ND mg/L	0.002	12/30/91	JM
Acid Digestion - Microwave EPA CLP SOW	Complete		12/31/92	CG
Lead, TCLP Leachate METHOD 7420	ND mg/L	0.3	01/03/92	JM
TCLP Leachate extraction METHOD 1311	Complete		12/28/91	ET
Selenium, TCLP Leachate METHOD 7740	ND mg/L	0.007	01/06/92	WFL

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.

SPL AA QC FORM

TEST CODE: AgDATE: 12/27/91ANALYST: JmMETHOD: FLAATIME: 16:00DETECTION LIMIT: 0.02# SAMPLES IN SET: 23UNITS: mg/LSAMPLE #'S IN SET: 12329-1C ; 12396-2D, 3D ; 12409-1D, 2A, 3C-18C ;
12438-1A ; 12439-1A, 2A

STANDARDS	EM, %T, ABS.	ACTUAL CONC.	THEORET. CONC.	%RECOVERY	UPPER LIMIT	LOWER LIMIT
BLANK	0.075	0.000	0.000	—	—	—
#1	0.085	0.500	0.500	100.0	105%	95%
#2	0.165	0.993	1.000	99.3	↓	↓
#3	0.319	1.982	2.000	99.1	↓	↓
#4						
#5						

CONTINUING CALIBRATION

ID	THEORETICAL	ACTUAL	% RECOVERY	UPPER LIMIT	LOWER LIMIT
ICV	0.800	0.839	104.9	110%	90%
LCS	0.050	0.054	108.0	120%	80%
CCU ₁	1.000	1.012	101.2	110%	90%
CCU ₂		1.014	101.4		
CCU ₃		1.005	100.5		
CCU ₄		1.003	100.3		
CCU ₅		1.007	100.7		
CCU ₆	↓	1.003	100.3	↓	↓
PB ^{12/26}	0	ND	NA	0.02	-0.02
PB ^{12/24}	↓	↓	↓	↓	↓
PB ^{12/27}	↓	↓	↓	↓	↓

% RECOVERY = $\frac{(\text{ACTUAL})}{(\text{THEORETICAL})} \times 100$ REVIEWED BY: Margie MarianiAPPROVED BY: Cynthia SchreinerDATE: 12/29/91DATE: 12/30/91

TEST:

Ag

MATRIX:

TCLP-liquid

ANALYSIS DATE:

12/27/91

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
12396-3D	ND	ND	NA	20	1
12329-C	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RP
12396-3D	ND	0.050	0.052	0.053	104.0	106.0	2	75 - 125	20
12329-C	ND	↓	0.045	0.044	90.0	88.0	2	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY:

Menga Mariani

APPROVED BY:

Cynthia Schreiner

DATE:

12/29/91

DATE:

12/30/91

TEST: gm 764 AgMATRIX: 7CLP-5021ANALYSIS DATE: 12/27/91

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
<u>12409-17C</u>	ND	ND	NA	20	1
<u>12409-4C</u>	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	% RI
<u>12409-17C</u>	ND	0.050	0.057	0.058	114.0	116.0	2	75 - 125	20
<u>12409-4C</u>	ND	↓	0.045	0.045	90.0	90.0	0	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Meagan MarionAPPROVED BY: Cynthia SchreinerDATE: 12/29/91DATE: 12/30/91

TEST CODE: ASDATE: 1/4/92ANALYST: WFLMETHOD: GFAATIME: 08:00DETECTION LIMIT: 6# SAMPLES IN SET: 86UNITS: ug/LSAMPLE #'S IN SET: 12495-1A-3A; 12516-1A-6A; 12517-7A; 12548-1A-612549-7A-12A; 12550-13A; 12409-1D-2D; 12396-3S-2D; 12409-3C-1

STANDARDS	EM, %T, ABS.	ACTUAL CONC.	THEORET. CONC.	%RECOVERY	UPPER LIMIT	LOWER LIMIT
BLANK	-0.002	0.0	0.0	NA	—	—
#1	0.111	25.0	25.0	100.0%	105.0%	95.0%
#2	0.222	49.9	50.0	99.8%	↓	↓
#3	0.447	100.0	100.0	100.0%	↓	↓
#4						
#5						

CONTINUING CALIBRATION

ID	THEORETICAL	ACTUAL	% RECOVERY	UPPER LIMIT	LOWER LIMIT
ICV	75.0	73.0	97.3%	110.0%	90.0%
LCS	40.0	40.1	100.2%	120.0%	80.0%
CCV ₁	50.0	46.9	93.8%	110.0%	90.0%
CCV ₂		48.5	97.0%		
CCV ₃		45.3	90.6%		
CCV ₄		48.7	97.4%		
CCV ₅		49.4	98.8%		
CCV ₆		47.3	94.6%		
CCV ₇		50.1	100.2%		
CCV ₈	↓	51.0	102.0%	↓	↓

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL})}{(\text{THEORETICAL})} \times 100$$

REVIEWED BY: Margo MarianiAPPROVED BY: Cynthia SchmeierDATE: 1/6/92DATE: 1/6/92

TEST CODE: ASDATE: 1/4/92ANALYST: WFLMETHOD: GFAATIME: 08:00DETECTION LIMIT: 6# SAMPLES IN SET: 87UNITS: ug/LSAMPLE #'S IN SET: 12433-1c-2c; 12438-1A; 12439-1A-2A; 12308-1A-8A; 12404-1A-5A; 12400-1c-6c; 12424-1D, 4D, 7D; 12434-1F-4F; 12406-1F-4F.

STANDARDS	EM, %T, ABS.	ACTUAL CONC.	THEORET. CONC.	%RECOVERY	UPPER LIMIT	LOWER LIMIT
BLANK						
#1						
#2						
#3						
#4						
#5						

See Page I

CONTINUING CALIBRATION

ID	THEORETICAL	ACTUAL	% RECOVERY	UPPER LIMIT	LOWER LIMIT
ICV					
LCS					
CCV ₉	50.0	49.9	99.8%	110.0%	90.0%
CCV ₁₀		48.7	97.4%		
CCV ₁₁		49.3	98.6%		
CCV ₁₂		45.3	90.6%		
CCV ₁₃		50.2	100.4%		
PB _{1/3}	0	ND	NA	+6	-6
PB _{12/26}					
PB _{12/30}					
PB _{12/24}					

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL})}{(\text{THEORETICAL})} \times 100$$
REVIEWED BY: Meggie MarianiAPPROVED BY: Cynthia SchmechelDATE: 1/6/92DATE: 1/6/92

TEST:

As

MATRIX:

8180/red

ANALYSIS DATE:

1/4/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES:	#1	#2	RPD (%)	RPD QC LIMIT:	DILUTION
2517-7A	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

#1

#2

RPD (%)

RPD QC LIMIT:

DILUTION

2517-7A

ND

ND

NA

20

1

20

20

20

20

20

20

20

20

20

RELATIVE PERCENT DIFFERENCE (RPD) = $\frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC
2517-7A	ND	40.0	30.2	34.1	75.5%	85.2%	12	75 - 125
								75 - 125
								75 - 125
								75 - 125
								75 - 125
								75 - 125
								75 - 125
								75 - 125
								75 - 125
								75 - 125

% RECOVERY = $\frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$

REVIEWED BY:

Meagan Marton

APPROVED BY:

Cynthia Schmeider

DATE:

1/6/92

DATE:

1/6/92

TEST:

Ac

MATRIX:

TCLP- Filter

ANALYSIS DATE:

1/4/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES:	=1	=2	RPD (%)	RPD QC LIMIT:	DILUTION
2396-3D	11.7	12.1	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%R
2396-3D	11.7	40.0	45.0	45.9	83.2%	85.5%	2	75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY:

Meagan Marlan

APPROVED BY:

Cynthia Schinner

DATE:

1/6/92

11/1/92

TEST: ASMATRIX: TCLP-soilANALYSIS DATE: 1/4/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES:	#1	#2	RPD (%)	RPD QC LIMIT:	DILUTION
2409-4c	24.8	23.5	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC
2409-4c	24.8	40.0	52.2	53.6	68.5%	72.0%	3	75 - 125
								75 - 125
								75 - 125
* - Matrix Interference								75 - 125
								75 - 125
								75 - 125
								75 - 125
								75 - 125
								75 - 125
								75 - 125

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Meagan MarionAPPROVED BY: Cynthia SchreinerDATE: 1/6/92

TEST:

As

MATRIX:

TCLP- soil

ANALYSIS DATE:

1/4/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES:	#1	#2	RPD (%)	RPD QC LIMIT:	DILUTION
2319-1A	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

2319-1A	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC
2319-1A	ND	40.0	45.1	44.5	112.8%	111.2%	1	75 - 125
								75 - 125
								75 - 125
								75 - 125
								75 - 125
								75 - 125
								75 - 125
								75 - 125
								75 - 125
								75 - 125

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY:

Meara Mariani

APPROVED BY:

Cynthia Schreiner

DATE:

1/6/92

DATE:

1/6/92

TEST:

AS

MATRIX:

Water

ANALYSIS DATE:

1/14/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES:	=1	=2	RPD (%)	RPD QC LIMIT:	DILUTION
12334-1A	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC
12334-1A	ND	40.0	42.8	42.5	107.0%	106.2%	1	75 - 125
								75 - 125
								75 - 125
								75 - 125
								75 - 125
								75 - 125
								75 - 125
								75 - 125
								75 - 125
								75 - 125

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY:

Meaza Mariam

APPROVED BY:

Cynthia Schreiner

DATE:

1/6/92

DATE:

1/6/92

TEST: ASMATRIX: soilANALYSIS DATE: 1/6/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES:	#1	#2	RPD (%)	RPD QC LIMIT:	DILUTION
12318-1A	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%R
12318-1A	ND	40.0	46.9	45.5	117.2%	113.8%	3	75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Meega MarianiAPPROVED BY: Cynthia SchuererDATE: 1/16/92

TEST: ASMATRIX: TCLP-olANALYSIS DATE: 1/6/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES:	#1	#2	RPD (%)	RPD QC LIMIT:	DILUTION
2396-48	5.7	5.4	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%R
2396-48	5.7	40.0	42.8	44.8	92.8	97.8	5	75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Meara MarianDATE: 1/6/92APPROVED BY: Cynthia SchreinerDATE: 1/6/92

TEST CODE: ASDATE: 1/4/92ANALYST: WFLMETHOD: GFAATIME: 08:00DETECTION LIMIT: 6# SAMPLES IN SET: 86UNITS: ug/LSAMPLE #'S IN SET: 12495-1A-3A; 12516-1A-6A; 12517-7A; 12548-1A-6549-7A-12A; 12550-13A; 12409-1D-2D; 12396-3S-2D; 12409-3C-1S12396-1D-4D; 12476-1A; 12541-1F-3F; 12487-1A; 12410-1C-3C; 12219-1A

STANDARDS	EM, %T, ABS.	ACTUAL CONC.	THEORET. CONC.	%RECOVERY	UPPER LIMIT	LOWER LIMIT
BLANK	-0.002	0.0	0.0	NA	—	—
#1	0.111	25.0	25.0	100.0%	105.0%	95.0%
#2	0.222	49.9	50.0	99.8%	↓	↓
#3	0.447	100.0	100.0	100.0%	↓	↓
#4						
#5						

CONTINUING CALIBRATION

ID	THEORETICAL	ACTUAL	% RECOVERY	UPPER LIMIT	LOWER LIMIT
ICV	75.0	73.0	97.3%	110.0%	90.0%
LCS	40.0	40.1	100.2%	120.0%	80.0%
CC1	50.0	46.9	93.8%	110.0%	90.0%
CC1/2		48.5	97.0%		
CC1/3		45.3	90.6%		
CC1/4		48.7	97.4%		
CC1/5		49.4	98.8%		
CC1/6		47.3	94.6%		
CC1/7		50.1	100.2%		
CC1/8	↓	51.0	102.0%	↓	↓

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL})}{(\text{THEORETICAL})} \times 100$$
REVIEWED BY: Menga MarianiAPPROVED BY: Cynthia SchmeierDATE: 1/6/92DATE: 1/6/92

TEST CODE: ASDATE: 1/4/92ANALYST: WFLMETHOD: GFAATIME: 08:00DETECTION LIMIT: 6= SAMPLES IN SET: 87UNITS: ug/LSAMPLE #'S IN SET: 12433-1c-2c; 12438-1A; 12439-1A-2A; 12308-1A-8A;12404-1A-5A; 12400-1c-6c; 12424-1D, 4D, TD; 12434-1F-4F; 12406-1A-2F-4F.

STANDARDS	EM, %T, ABS.	ACTUAL CONC.	THEORET. CONC.	%RECOVERY	UPPER LIMIT	LOWER LIMIT
BLANK						
#1						
#2						
#3						
#4						
#5						

See Page I

CONTINUING CALIBRATION

ID	THEORETICAL	ACTUAL	% RECOVERY	UPPER LIMIT	LOWER LIMIT
ICV					
LCS					
CCV ₆	50.0	49.9	99.8%	110.0%	90.0%
CCV ₁₀		48.7	97.4%		
CCV ₁₁		49.3	98.6%		
CCV ₁₂		45.3	90.6%		
CCV ₁₃		50.2	100.4%		
PB _{1/3}	0	ND	NA	+6	-6
PB _{12/20}					
PB _{12/30}					
PB _{12/24}					

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL})}{(\text{THEORETICAL})} \times 100$$
REVIEWED BY: Meggie MarianiAPPROVED BY: Cynthia SchmeierDATE: 1/6/92DATE: 1/6/92

TEST: ASMATRIX: 81580/redANALYSIS DATE: 1/4/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES:	#1	#2	RPD (%)	RPD QC LIMIT:	DILUTION
2517-7A	MS	MS	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC
2517-7A	MS	40.0	30.2	34.1	75.5%	85.2%	12	75 - 125
								75 - 125
								75 - 125
								75 - 125
								75 - 125
								75 - 125
								75 - 125
								75 - 125
								75 - 125

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Meagan MarronDATE: 1/6/92APPROVED BY: Cynthia SchmeierDATE: 1/6/92

TEST:

Ac

MATRIX:

TCLP Filter

ANALYSIS DATE:

1/4/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES:	#1	#2	RPD (%)	RPD QC LIMIT:	DILUTION
2396-3D	11.7	12.1	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

RELATIVE PERCENT DIFFERENCE (RPD) = $\frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%
2396-3D	11.7	40.0	45.0	45.9	83.2%	85.5%	2	75 - 125	
								75 - 125	
								75 - 125	
								75 - 125	
								75 - 125	
								75 - 125	
								75 - 125	
								75 - 125	
								75 - 125	
								75 - 125	

% RECOVERY = $\frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$

REVIEWED BY:

Margaret Marlow

APPROVED BY:

Cynthia Schinner

DATE:

1/6/92

DATE:

1/6/92

TEST:

AS

MATRIX:

TCLP soil

ANALYSIS DATE:

1/4/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES:	=1	=2	RPD (%)	RPD QC LIMIT:	DILUTION
2409-4c	24.8	23.5	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%F
2409-4c	24.8	40.0	52.2	53.6	68.5%	72.0%	3	75 - 125	
								75 - 125	
								75 - 125	
* - Matrix Interference								75 - 125	
								75 - 125	
								75 - 125	
								75 - 125	
								75 - 125	
								75 - 125	
								75 - 125	

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY:

Meagan Marion

APPROVED BY:

Cynthia Schreiner

DATE:

1/6/92

DATE:

1/6/92

TEST:

AS

MATRIX:

TCLP- soil

ANALYSIS DATE:

1/4/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES:	#1	#2	RPD (%)	RPD QC LIMIT:	DILUTION
2319-1A	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%R
2319-1A	ND	40.0	45.1	44.5	112.8%	111.2%	1	75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY:

Meara Mariani

DATE:

1/6/92

APPROVED BY:

Cynthia Schinner

DATE:

1/6/92

TEST:

AS

MATRIX:

Water

ANALYSIS DATE:

1/17/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES:	#1	#2	RPD (%)	RPD QC LIMIT:	DILUTION
12334-1A	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

RELATIVE PERCENT DIFFERENCE (RPD) = $\frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	
12334-1A	ND	40.0	42.8	42.5	107.0%	106.2%	1	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

% RECOVERY = $\frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$

REVIEWED BY:

Meagha Mariani

APPROVED BY:

Cynthia Schreiner

DATE:

1/16/92

DATE:

1/6/92

TEST:

AS

MATRIX:

soil

ANALYSIS DATE:

1/6/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES:	#1	#2	RPD (%)	RPD QC LIMIT:	DILUTION
12318-1A	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

RELATIVE PERCENT DIFFERENCE (RPD) = $\frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%
12318-1A	ND	40.0	46.9	45.5	117.2%	113.8%	3	75 - 125	
								75 - 125	
								75 - 125	
								75 - 125	
								75 - 125	
								75 - 125	
								75 - 125	
								75 - 125	
								75 - 125	
								75 - 125	

% RECOVERY = $\frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$

REVIEWED BY:

Marya Mardam

APPROVED BY:

C. Schriener

DATE:

1/6/92

DATE:

1/6/92

EST:

AS

MATRIX:

TCLP-oilANALYSIS DATE: 1/6/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES:	#1	#2	RPD (%)	RPD QC LIMIT:	DILUTION
2396-48	5.7	5.4	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

RELATIVE PERCENT DIFFERENCE (RPD) = $\frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RI
2396-48	5.7	40.0	42.8	44.8	92.8%	97.8%	5	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

% RECOVERY = $\frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$

REVIEWED BY:

Meara Marian

APPROVED BY:

Cynthia Schreiner

DATE:

1/6/92

DATE:

1/6/92

SPL ICP (METHOD 6010/200.7) STANDARD QC FORM

DATE: 12/26/91

TIME: 15:3

FILE: 1226 F

ANALYST: Da.

= SAMPLES IN SET: 7

UNITS: mg/l.

SAMPLE #'s IN SET: 12319 1A 12254 1A 12219 1A 12396 3d 2d

12459 12

[illegible]

REVIEWED BY: Meara Marian

DATE: 12/27/91

APPROVED BY: Carl (W) H. Hines

DATE: 12/27/91

SPL ICP DUPLICATES DATA

SAMPLE ID	TEST CODE	#1	#2	RPD (%)	QC LIMITS	DILUTION
2319 1A	BA	0.989	1.026	4	20	1
↓	CR	ND	ND	N/A	20	1
					20	
					20	
					20	
					20	
					20	
					20	
					20	

$$\text{RELATIVE PERCENT DIFFERENCE} = \text{RPD} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPL ICP MATRIX SPIKE DATA

SAMPLE ID	TEST CODE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	% R
2319 1A	BA	0.989	0.500	1.424	1.449	87.0	92.0	2	75-125	20
↓	CR	ND	0.200	0.172	0.130	86.0	90.0	5	75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20

$$\% \text{ RECOVERY} = \frac{(\text{SPIKED SAMPLE RESULT} - \text{SAMPLE RESULT})}{(\text{SPIKE ADDED})} \times 100$$

REVIEWED BY: Maggie MatiamAPPROVED BY: Carlton SchreinerDATE: 12/27/91DATE: 12/27/91

FILE: 1226 FMATRIX: TECP- FillerANALYSIS DATE: 12/26/91SPL ICP DUPLICATES DATA

SAMPLE ID	TEST CODE	#1	#2	RPD (%)	QC LIMITS	DILUTION
2396 3d	BA	0.600	0.577	4	20	1
↓	CK	0.042	0.043	N/A	20	1
					20	
					20	
					20	
					20	
					20	
					20	
					20	
					20	

$$\text{RELATIVE PERCENT DIFFERENCE} = \text{RPD} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPL ICP MATRIX SPIKE DATA

SAMPLE ID	TEST CODE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	% F
2396 3d	BA	0.600	0.500	1.074	1.117	94.8	103.4	4	75-125	20
↓	CK	0.042	0.200	0.232	0.245	95.0	101.5	5	75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20

$$\% \text{ RECOVERY} = \frac{(\text{SPIKED SAMPLE RESULT} - \text{SAMPLE RESULT})}{(\text{SPIKE ADDED})} \times 100$$

REVIEWED BY: Meagan MoriamDATE: 12/27/91APPROVED BY: Christopher SchiemerDATE: 12/27/91

SPL ICP (METHOD 6010/200.7) STANDARD QC FORM

DATE: 12/31/91TIME: 10:50FILE: 1231AANALYST: MM# SAMPLES IN SET: 17UNITS: mg/LSAMPLE #'s IN SET: 12409-(3C-11C, 13C-18C)12410-(01C)12329-(01C)

TEST CODE	IDL	BLANK		STANDARD	
		EM	CONC	EM	CONC
Bq	0.06	1.5	0.000	28965.0	5.000
Cr	0.02	6.0	0.000	16251.5	5.000

REVIEWED BY: Juan MarroquinAPPROVED BY: Cynthia SchmeierDATE: 1/2/92DATE: 1/2/92

SPL ICP CALIBRATION VERIFICATION

ID	TEST CODE	TRUE CONC.	FOUND CONC.	% RECOVERY	QC LIMITS	
					UPPER	LOWER
ICV	Ba	2.000	2.061	103.0	110%	90%
	Cr	2.208	2.266	102.6		
CCV1	Ba	2.000	2.101	105.0		
	Cr	2.208	2.299	104.1		
CCV2	Ba	2.000	2.108	105.4		
	Cr	2.208	2.337	105.8		
CCV3	Ba	2.000	2.087	104.4		
	Cr	2.208	2.282	¹¹⁷ 103.4		
CCV4	Ba	2.000	2.079	103.6		
	Cr	2.208	2.276	103.1	↓	↓
PB 12/26	Ba	0	N.D	N/A	0.06	-0.06
	Ba Cr				0.02	-0.02
PB 12/27	Ba				0.06	-0.06
	Cr				0.02	-0.02
PB 12/30	Ba				0.06	-0.06
	Cr				0.02	-0.02
PB 12/23	Ba				0.06	-0.06
	Cr	↓	↓	↓	0.02	-0.02

CALCULATION: % RECOVERY = $\frac{(\text{FOUND CONC.})}{(\text{TRUE CONC.})} \times 100$

REVIEWED BY: Joana MarroquinAPPROVED BY: Cynthia SchmeierDATE: 1/2/92DATE: 1/2/92

FILE: 1231AMATRIX: Tclp- SoilANALYSIS DATE: 12/31/91SPL ICP DUPLICATES DATA

SAMPLE ID	TEST CODE	#1	#2	RPD (%)	QC LIMITS	DILUTION
12409-17c	Bq	0.822	0.822	0	20	1
	Cr	0.0	0.0	0.0	20	1
					20	
					20	
					20	
					20	
					20	
					20	
					20	
					20	

$$\text{RELATIVE PERCENT DIFFERENCE} = \text{RPD} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPL ICP MATRIX SPIKE DATA

SAMPLE ID	TEST CODE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	% I
12409-17c	Bq	0.822	0.500	1.253	1.242	86.2	84.0	1	75-125	2
	Cr	0.0	0.200	0.194	0.190	97.0	95.0	2	75-125	2
									75-125	2
									75-125	2
									75-125	2
									75-125	2
									75-125	2
									75-125	2
									75-125	2

$$\% \text{ RECOVERY} = \frac{(\text{SPIKED SAMPLE RESULT} - \text{SAMPLE RESULT})}{(\text{SPIKE ADDED})} \times 100$$

REVIEWED BY:

Joan Marozin
1/16/92

APPROVED BY:

Cynthia Schreiner
1/12/92

FILE: 1231AMATRIX: TCLP - SOILANALYSIS DATE: 12/31/91SPL ICP DUPLICATES DATA

SAMPLE ID	TEST CODE	#1	#2	RPD (%)	QC LIMITS	DILUTION
12409-4C	Ba	0.654	0.631	4	20	1
	Cr	N/D	N/D	N/A	20	1
					20	
					20	
					20	
					20	
					20	
					20	
					20	

$$\text{RELATIVE PERCENT DIFFERENCE} = \text{RPD} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPL ICP MATRIX SPIKE DATA

SAMPLE ID	TEST CODE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	% R
12409-4C	Ba	0.654	0.500	1.096	1.084	88.4	86.0	1	75-125	20
	Cr	N/D	0.200	0.195	0.189	97.5	94.5	3	75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20

$$\% \text{ RECOVERY} = \frac{(\text{SPIKED SAMPLE RESULT} - \text{SAMPLE RESULT})}{(\text{SPIKE ADDED})} \times 100$$

REVIEWED BY: Joelle MarroquinAPPROVED BY: Cynthia SchmeierDATE: 1/2/92DATE: 1/2/92

FILE: 1231AMATRIX: TCLP-LiquidANALYSIS DATE: 12/31/91SPL ICP DUPLICATES DATA

SAMPLE ID	TEST CODE	#1	#2	RPD (%)	QC LIMITS	DILUTION
12329-1C	Ba	N.D.	N.D.	N/A	20	1
	Cr	N.D.	N.D.	N/A	20	1
					20	
					20	
					20	
					20	
					20	
					20	
					20	
					20	

$$\text{RELATIVE PERCENT DIFFERENCE} = \text{RPD} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPL ICP MATRIX SPIKE DATA

SAMPLE ID	TEST CODE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	% R
12329-1C	Ba	N.D.	0.500	0.525	0.523	105.0	104.6	0	75-125	20
	Cr	N.D.	0.200	0.230	0.227	115.0	113.5	1	75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20

$$\% \text{ RECOVERY} = \frac{(\text{SPIKED SAMPLE RESULT} - \text{SAMPLE RESULT})}{(\text{SPIKE ADDED})} \times 100$$

REVIEWED BY:

Jeane Marroquin

APPROVED BY:

Cynthia Schreiner

DATE:

1/2/92

DATE:

1/2/92

SPL AA QC FORM

TEST CODE: CdDATE: 12/27/91ANALYST: GmMETHOD: FLAATIME: 15.03DETECTION LIMIT: 0.03# SAMPLES IN SET: 23 24 23UNITS: mg/LSAMPLE #'S IN SET: 12329-1C ; 12396-2D, 3D ; 12409-1D, 2D, 3C-18C ;
12438-1A ; 12439-1A, 2A

STANDARDS	EM, %T, ABS.	ACTUAL CONC.	THEORET. CONC.	%RECOVERY	UPPER LIMIT	LOWER LIMIT
BLANK	-0.112	0.000	0.000	—	—	—
#1	0.064	0.200	0.200	100.0	105%	95%
#2	0.147	0.444	0.500	98.8	↓	↓
#3	0.271	0.977	1.000	97.7	↓	↓
#4						
#5						

CONTINUING CALIBRATION

ID	THEORETICAL	ACTUAL	% RECOVERY	UPPER LIMIT	LOWER LIMIT
ICV	0.800	0.787	98.4	110%	90%
LCS	0.050	0.056	112.0	120%	80%
CCV1	0.500	0.518	103.6	110%	90%
CCV2		0.516	103.2		
CCV3		0.512	102.4		
CCV4		0.510	102.0		
CCV5	↓	0.510	102.0	↓	↓
PB 12/26	0	ND	NA	0.03	-0.03
PB 12/24	↓	↓	↓	↓	↓
PB 12/27	↓	↓	↓	↓	↓

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL})}{(\text{THEORETICAL})} \times 100$$
REVIEWED BY: Melissa MoriamAPPROVED BY: Cynthia SchreinerDATE: 12/29/91DATE: 12/30/91

TEST: PdMATRIX: TCLP-liquidANALYSIS DATE: 12/27/91

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
12396-3D	ND	ND	NA	20	1
12329-1C	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPD
12396-3D	ND	0.050	0.055	0.057	110.0	114.0	4	75 - 125	20
12329-1C	ND	0.050	0.059	0.058	118.0	116.0	2	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Meara MarianAPPROVED BY: Cynthia SchreinerDATE: 12/29/91DATE: 12/30/91

TEST: CdMATRIX: ICLP- 5726ANALYSIS DATE: 12/27/91

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
12409-17C	ND	ND	NA	20	1
12409-4C	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RP
12409-17C	ND	0.050	0.058	0.058	116.0	116.0	0	75 - 125	20
12409-4C	ND	0.050	0.056	0.057	112.0	114.0	2	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Meagan MarianiAPPROVED BY: Cynthia SchmeierDATE: 12/29/91DATE: 12/30/91

SPL AA QC FORM

TEST CODE: HgDATE: 12/27/91ANALYST: JmMETHOD: CVATIME: 9:40DETECTION LIMIT: 0.6# SAMPLES IN SET: 30UNITS: ug/LSAMPLE #'S IN SET: 12329-1C ; 12396-2D, 3D ; 12409-1D, 2D ; 12318-1A-4A ;
12324-1A-5A ; 12353-1C, 2C, 4A, 5A, 6C ; 12400-1C-2C ; 12424-1D, 4D, 7D

STANDARDS	EM, %T, ABS.	ACTUAL CONC.	THEORET. CONC.	%RECOVERY	UPPER LIMIT	LOWER LIMIT
BLANK	0.002	0.00	0.00	—	—	—
#1	0.011	0.50	0.50	100.0	105%	95%
#2	0.031	1.04	1.00	104.0		
#3	0.138	4.98	5.00	99.6		
#4	0.268	9.92	10.00	99.2	↓	↓
#5						

CONTINUING CALIBRATION

ID	THEORETICAL	ACTUAL	% RECOVERY	UPPER LIMIT	LOWER LIMIT
ICV	2.50	2.58	103.2	120%	80%
LCS	2.00	2.27	113.5		
CCV ₁	2.50	2.73	109.2		
CCV ₂		2.83	113.2		
CCV ₃		2.60	104.0		
CCV ₄		2.67	106.8		
CCV ₅		2.48	99.2		
CCV ₆	↓	2.79	111.6	↓	↓
PB	0	ND	NA	0.6	-0.6

% RECOVERY = $\frac{(\text{ACTUAL})}{(\text{THEORETICAL})} \times 100$ REVIEWED BY: Meaga MarianAPPROVED BY: Cynthia SchmeierDATE: 12/27/91DATE: 12/27/91

TEST: HgMATRIX: 5071ANALYSIS DATE: 12/27/91

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
12318-1A	ND	ND	NA	20	1
12400-1C	0.30	0.29	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	% RECOVERY
12318-1A	ND	2.00	2.32	2.26	116.0	113.0	3	75 - 125	20
12400-1C	0.30 gm AA	2.00	2.30	2.29	100.0	99.5	0	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Neaga MatiamAPPROVED BY: Cynthia SchmeierDATE: 12/27/91DATE: 12/27/91

TEST:

HgMATRIX: TCLP-LiquidANALYSIS DATE: 12/27/91

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
12409-20	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RE
12409-20	ND	2.00	1.85	1.61	92.5	80.5	14	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY:

Meara Mariam

APPROVED BY:

Cynthia Schreiner

DATE:

12/27/91

DATE:

12/27/91

SPL AA QC FORM

TEST CODE: HgDATE: 12/30/91ANALYST: JmMETHOD: CVATIME: 15:57DETECTION LIMIT: 0.6# SAMPLES IN SET: 24UNITS: ug/LSAMPLE #'S IN SET: 12396-1D, 4D ; 12409-3C-18^{11C}gm, 13C-18C
12410-1C, 3C ; 12433-1C, 2C ; 12438-1A ; 12439-1A, 2A

STANDARDS	EM, %T, ABS.	ACTUAL CONC.	THEORET. CONC.	%RECOVERY	UPPER LIMIT	LOWER LIMIT
BLANK	0.006	0.00	0.00	—	—	—
#1	0.015	0.50	0.50	100.0	105%	95%
#2	0.030	1.00	1.00	100.0	↓	↓
#3	0.157	5.01	5.00	100.2	↓	↓
#4	0.281	9.75	10.00	97.5	↓	↓
#5						

CONTINUING CALIBRATION

ID	THEORETICAL	ACTUAL	% RECOVERY	UPPER LIMIT	LOWER LIMIT
ICV	2.50	2.63	105.2	120%	80%
LCS	2.00	2.28	114.0		
CCV ₁	2.50	2.57	102.8		
CCV ₂		2.49	99.6		
CCV ₃		2.51	100.4		
CCV ₄		2.18	87.2		
CCV ₅	↓	2.21	88.4	↓	↓
PB 12/24	0	NO	NA	0.6	-0.6
PB 12/28	↓	↓	↓	↓	↓
PB 12/28	↓	↓	↓	↓	↓

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL})}{(\text{THEORETICAL})} \times 100$$
REVIEWED BY: Marga MariamAPPROVED BY: Cynthia SchreinerDATE: 12/31/91DATE: 12/31/91

TEST: HgMATRIX: TCLP-SOLANALYSIS DATE: 12/30/91

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
12409-18C	ND	ND	NA	20	4
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPD
12409-18C	ND	2.00	1.98	2.09	99.0	104.5	5	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Margo MarianiDATE: 12/31/91APPROVED BY: Cynthia SchreinerDATE: 12/31/91

TEST: HgMATRIX: TECP-liquidANALYSIS DATE: 12/30/91

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
12438-1A	ND	ND	NA	20	4
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPD
12438-1A	NA	2.00	1.73	1.70	86.5	85.0	2	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Meaga MarianiAPPROVED BY: Cynthia SchreinerDATE: 12/31/91DATE: 12/31/91

TEST:

Hg

MATRIX:

TCLP- oil

ANALYSIS DATE:

12/30/91

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
12396-1D	ND	ND	NA	20	4
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPD
12396-1D	ND	2.00	0.76	0.68	*38.0	*34.0	11	75 - 125	20
								75 - 125	20
								75 - 125	20
* - Matrix Interference								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY:

Mearza Marian

APPROVED BY:

Cynthia Schreiner

DATE:

12/31/91

DATE:

12/31/91

SPL AA QC FORM

TEST CODE: PhDATE: 12/27/91ANALYST: JmMETHOD: FLAATIME: 14:07DETECTION LIMIT: 0.3# SAMPLES IN SET: 11UNITS: mg/LSAMPLE #'S IN SET: 12329-K ; 12396-2D, 3D ; 12409-1D, 2D, 3C, 1K, 18C ;
12438-1A ; 12439-1A, 2A

STANDARDS	EM, %T, ABS.	ACTUAL CONC.	THEORET. CONC.	%RECOVERY	UPPER LIMIT	LOWER LIMIT
BLANK	-0.000 ³ gm	0.00	0.00	—	—	—
#1	0.011	0.50	0.50	100.0	105%	95%
#2	0.023	1.01	1.00	101.0	↓	↓
#3	0.045	2.00	2.00	100.0	↓	↓
#4						
#5						

CONTINUING CALIBRATION

ID	THEORETICAL	ACTUAL	% RECOVERY	UPPER LIMIT	LOWER LIMIT
ICV	1.00	1.01	101.0	110%	90%
LCS	0.50	0.48	96.0	120%	80%
CCV ₁	1.00	0.94	94.0	110%	90%
CCV ₂	↓	1.00	100.0	↓	↓
CCV ₃	↓	0.94	94.0	↓	↓
PB 12/26	0	ND	NA	0.3	-0.3
PB 12/24	↓	↓	↓	↓	↓

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL})}{(\text{THEORETICAL})} \times 100$$

REVIEWED BY: Margo MowaraAPPROVED BY: Cynthia SchinnerDATE: 12/27/91DATE: 12/30/91

TEST: PbMATRIX: ICLP-LiquidANALYSIS DATE: 12/27/91

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
12396-30 ^{am}	ND	ND	NA	20	1
12329-1C	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPD
12396-30 ^{am}	ND	0.50	0.52	0.53	104.0	106.0	2	75 - 125	20
12329-1C	ND	0.50	0.39	0.42	78.0	84.0	7	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Meagan WatsonDATE: 12/27/91APPROVED BY: Cynthia SchmeierDATE: 12/30/91

TEST: PbMATRIX: TCUP-SOILANALYSIS DATE: 12/27/91

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
12409-17C	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPD
12409-17C	ND	0.50	0.53	0.49	106.0	98.0	8	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Meagan MarianiAPPROVED BY: Cynthia SchreinerDATE: 12/29/91DATE: 12/30/91

SPL AA QC FORM

TEST CODE: P6DATE: 12/30/91ANALYST: JmMETHOD: FLAATIME: 13:13DETECTION LIMIT: 0.3# SAMPLES IN SET: 16UNITS: mg/LSAMPLE #'S IN SET: 12398-1C-4C ; 12409-4C-^{mm}16C 4C-11C, 13C-16C

STANDARDS	EM, %T, ABS.	ACTUAL CONC.	THEORET. CONC.	%RECOVERY	UPPER LIMIT	LOWER LIMIT
BLANK	0.015	0.00	0.00	—	—	—
#1	0.011	0.50	0.50	100.0	105%	95%
#2	0.023	1.00	1.00	100.0	↓	↓
#3	0.043	1.97	2.00	98.5	↓	↓
#4						
#5						

CONTINUING CALIBRATION

ID	THEORETICAL	ACTUAL	% RECOVERY	UPPER LIMIT	LOWER LIMIT
ICV	1.00	0.96	96.0	110%	90%
LCS	0.50	0.48	96.0	120%	80%
CCV ₁	1.00	0.92	92.0	110%	90%
CCV ₂	↓	0.96	96.0	↓	↓
CCV ₃	↓	0.97	97.0	↓	↓
CCV ₄	↓	0.97	97.0	↓	↓
PB ¹⁷ / ₂₇	0	ND	NA	0.3	-0.3
PB ¹² / ₂₇	↓	↓	↓	↓	↓

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL})}{(\text{THEORETICAL})} \times 100$$
REVIEWED BY: Megara MarianiAPPROVED BY: Cynthia SchreinerDATE: 12/30/91DATE: 12/30/91

TEST: PbMATRIX: TCLP-soilANALYSIS DATE: 12/30/91

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
12398-1C	ND	ND	NA	20	1
12409-4C	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPD
12398-1C	ND	0.50	0.46	0.47	92.0	94.0	2	75 - 125	20
12409-4C	ND	0.50	0.48	0.56	96.0	112.0	15	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Meara MarianiAPPROVED BY: Cynthia SchmeierDATE: 12/30/91DATE: 12/30/91

TEST CODE: SCDATE: 1/6/92ANALYST: WFLMETHOD: GFAATIME: 10:52DETECTION LIMIT: 6# SAMPLES IN SET: 28UNITS: ug/LSAMPLE #'S IN SET: 12424-4D, 7B; 12329-1c; 12410-3c, 1c; 12489-1A; 12487-1A; 12396-2D, 3D, 4D; 12409-1D, 2D, 3c - 8c; 12318-1A (Qc only); 12325-1D; 12334-1A (Qc only)

STANDARDS	EM. %T, ABS.	ACTUAL CONC.	THEORET. CONC.	%RECOVERY	UPPER LIMIT	LOWER LIMIT
BLANK	0.003	0.0	0.0	NA	—	—
#1	0.072	25.0	25.0	100.0	105.0%	95.0%
#2	0.162	50.8	50.0	101.6%	↓	↓
#3	0.304	98.7	100.0	98.7%	↓	↓
#4						
#5						

CONTINUING CALIBRATION

ID	THEORETICAL	ACTUAL	% RECOVERY	UPPER LIMIT	LOWER LIMIT
ICV	75.0	74.2	98.9%	110.0%	90.0%
LCS	30.0	29.6	98.7%	120.0%	80.0%
CCV ₁	50.0	48.7	97.4%	110.0%	90.0%
CCV ₂		49.1	98.2%	↓	↓
CCV ₃		50.8	101.6%	↓	↓
CCV ₄		48.3	96.6%	↓	↓
CCV ₅		50.5	101.0%	↓	↓
CCV ₆		52.6	105.2%	↓	↓
CCV ₇	↓			↓	↓

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL})}{(\text{THEORETICAL})} \times 100$$
REVIEWED BY: Mearge MorganAPPROVED BY: Cynthia SchmeierDATE: 1/6/92DATE: 1/6/92

11

TEST CODE: SeDATE: 1/6/92ANALYST: WFLMETHOD: GFAATIME: WFLDETECTION LIMIT: 6= SAMPLES IN SET: 28/9UNITS: ug/LSAMPLE #'S IN SET: SEE PAGE I

STANDARDS	EM, %T, ABS.	ACTUAL CONC.	THEORET. CONC.	%RECOVERY	UPPER LIMIT	LOWER LIMIT
BLANK						
#1						
#2						
#3						
#4						
#5						

CONTINUING CALIBRATION

ID	THEORETICAL	ACTUAL	% RECOVERY	UPPER LIMIT	LOWER LIMIT
ICV					
LCS					
PB12/24	0	ND	NA	+6	-6
PB12/24	↓	↓	↓	↓	↓
PB12/31					
PB12/26	↓	↓	↓	↓	↓

% RECOVERY = $\frac{(\text{ACTUAL})}{(\text{THEORETICAL})} \times 100$

REVIEWED BY: Meagan MurrenAPPROVED BY: Cynthia SchreinerDATE: 1/6/92DATE: 1/6/92

TEST: SeMATRIX: TCLP-Filtered ANALYSIS DATE: 1/6/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES:	#1	#2	RPD (%)	RPD QC LIMIT:	DILUTION
12487-1A	NS	NS	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPD
12487-1A	NS	30.0	20.5	20.8	68.3%	69.3%	1	75 - 125	20
								75 - 125	20
								75 - 125	20
*- Matrix Interference								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Meagan MarlanDATE: 1/6/92APPROVED BY: Cynthia SchreinerDATE: 1/6/92

TEST:

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MATRIX:

TCLP soil

ANALYSIS DATE:

1/6/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES:	#1	#2	RPD (%)	RPD QC LIMIT:	DILUTION
12410-3c	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

RELATIVE PERCENT DIFFERENCE (RPD) = $\frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC %RPI	
12410-3c	ND	30.0	16.0	15.8	33.3	52.7%	1	75 - 125	20
								75 - 125	20
								75 - 125	20
* - Matrix Interference								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

% RECOVERY = $\frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$

REVIEWED BY:

Meagan Mariani

APPROVED BY:

Cynthia Schreiner

DATE:

1/6/92

DATE:

1/6/92

TEST:

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MATRIX:

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ANALYSIS DATE:

1/6/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES:	#1	#2	RPD (%)	RPD QC LIMIT:	DILUTION
2329-1c	ND	ND	NA	20	5x
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	
2329-1c	ND	30.0	27.0	24.6	90.0%	82.0%	9	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY:

Meagan Marian

APPROVED BY:

Cynthia Schreiner

DATE:

1/6/92

DATE:

1/6/92

TEST:

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MATRIX:

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ANALYSIS DATE:

1/6/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES:	#1	#2	RPD (%)	RPD QC LIMIT:	DILUTION
2318-1A	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

RELATIVE PERCENT DIFFERENCE (RPD) = $\frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	
2318-1A	ND	30.0	28.0	27.8	93.3%	92.7%	1	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

% RECOVERY = $\frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$

REVIEWED BY:

Meagan Martin

APPROVED BY:

Cynthia Schmeier

DATE:

1/6/92

DATE:

1/6/92

TEST:

Se

MATRIX:

TCLP-Filtered

ANALYSIS DATE:

1/6/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES:	#1	#2	RPD (%)	RPD QC LIMIT:	DILUTION
12396-3D	NS	NS	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RP
12396-3D	NS	30.018.3	19.1	1.0%	63.7%	4		75 - 125	20
								75 - 125	20
								75 - 125	20
* - Matrix Interference								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY:

Margo Murnian

DATE:

1/6/92

APPROVED BY:

Cynthia Schreiner

DATE:

1/6/92

TEST:

SC

MATRIX:

TCLP-oil

ANALYSIS DATE:

1/6/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES:	#1	#2	RPD (%)	RPD QC LIMIT:	DILUTION
12396-4D	NS	NS	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS	
								% REC	%RP
12396-4B	NS	30.0	27.1	25.1	90.3%	83.7%	8	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY:

Meagan Maxwell

APPROVED BY:

Cynthia Schreiner

DATE:

1/6/92

DATE:

1/6/92

TEST:

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MATRIX:

TCLP- Soil

ANALYSIS DATE:

1/6/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT:	DILUTION
12409-4c	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	% RE
12409-4c	ND	30.0	19.2	21.0	64.0%	70.0%	9	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

* - Matrix Interference

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY:

Manga Morlan

APPROVED BY:

Cynthia Schmeier

1/6/92

TEST:

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MATRIX:

Water

ANALYSIS DATE:

1/6/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT:	DILUTION
2334-1A	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RP
2334-1A	ND	30.0	31.2	31.7	104.0%	105.7%	2	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY:

Marya Mariani

APPROVED BY:

A. J. Thad Schinner

11109

1/6/92

014

SPL AA QC FORM

TEST CODE: SpDATE: 1/7/92ANALYST: DRDMETHOD: GFAATIME: 16:48DETECTION LIMIT: 6# SAMPLES IN SET: 9-2322UNITS: ug/LSAMPLE #'S IN SET: 12409 (9-11C, 13-12C); 12396-3D (QC only); 12432-1A;
12439 (1, 2A); 12433 (1, 2C); 12435 (1, 6A); 12436 (7-9A) 12435-1A-3A, 5A, 6A

STANDARDS	EM, %T, ABS.	ACTUAL CONC.	THEORET. CONC.	%RECOVERY	UPPER LIMIT	LOWER LIMIT
BLANK	0.003	0.0	0.0	NA	105.0%	95.0%
#1	0.106	25.0	25.0	100.0%		
#2	0.224	50.6	50.0	101.2%		
#3	0.417	98.6	100.0	98.6%	↓	↓
#4						
#5						

CONTINUING CALIBRATION

ID	THEORETICAL	ACTUAL	% RECOVERY	UPPER LIMIT	LOWER LIMIT
ICV	75.0	76.2	101.6%	110.0%	90.0%
LCS	30.0	27.6	92.0%	120.0%	80.0%
CCV ₁	50.0	52.2	104.4%	110.0%	90.0%
CCV ₂		46.9	93.8%		
CCV ₂		51.1	102.2%		
CCV ₃		50.1	100.2%		
CCV ₄		48.9	97.8%		
CCV ₅		53.3	106.6%		
CCV ₆		46.9	93.8%		
CCV ₇	↓	50.9	101.8%	↓	↓

continued next page

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL})}{(\text{THEORETICAL})} \times 100$$

REVIEWED BY: Meagan MarionAPPROVED BY: Cynthia SchuerelDATE: 1/8/92DATE: 1/8/92

SPL AA QC FORM

TEST CODE: SeDATE: 1/7/92ANALYST: MMOMETHOD: GFAA

TIME: _____

DETECTION LIMIT: 6

SAMPLES IN SET: _____

UNITS: ug/L

SAMPLE #'S IN SET: _____

STANDARDS	EM, %T, ABS.	ACTUAL CONC.	THEORET. CONC.	%RECOVERY	UPPER LIMIT	LOWER LIMIT
BLANK						
#1						
#2						
#3						
#4						
#5						

CONTINUING CALIBRATION

ID	THEORETICAL	ACTUAL	% RECOVERY	UPPER LIMIT	LOWER LIMIT
ICV					
LCS					
PB _{12/26}	0.0	ND	NA	6	-6
PB _{12/27}	0.0	↓	↓	↓	↓
PB _{12/30}	0.0	↓	↓	↓	↓

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL})}{(\text{THEORETICAL})} \times 100$$
REVIEWED BY: Melissa MarianiAPPROVED BY: Cynthia SchreinerDATE: 1/8/92DATE: 1/8/92

TEST: SeMATRIX: TRIPLE check to Se.1ANALYSIS DATE: 1/7/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
12409-17c	N/D	N/D	N/A	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RP
12409-17c	N/D	30	17.8	18.8	*59.3%	*62.7%	5	75 - 125	20
								75 - 125	20
								75 - 125	20
* - Matrix Interference								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Meagan MarionAPPROVED BY: Cynthia SchreinerDATE: 1/8/92DATE: 1/8/92

TEST: SeMATRIX: TCLP Leachate FilteredANALYSIS DATE: 1/7/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
12396-3D	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RP
12396-3D	ND	30.0	19.2	22.2	* 66.0%	* 74.0%	14	75 - 125	20
								75 - 125	20
								75 - 125	20
*- Matrix Interference								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Meara MartinDATE: 1/8/92APPROVED BY: Cynthia SchanerDATE: 1/8/92

TEST: SeMATRIX: DissolvedANALYSIS DATE: 11/7/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
12435-1A	ND	ND	NA	20	2
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPI
12435-1A	ND	30	32.1	30.7	107.0%	102.3%	4	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Meagan MarianiAPPROVED BY: Cynthia SchmeierDATE: 11/8/92DATE: 11/8/92



8880 Interchange Drive, Houston, Texas 77054 713/660-0901

Wet Chemistry QA/QC Validation Report

Test Code PHDate 12-26-91Analyst KEWMethod 150.1Time 9:55aMatrix LIQUID# Of Samples in Set 17Detection Limit NONE

Sample #'s in Set	112438-1B	112428-3B, 4B, 8D		Units <u>PH UNIT</u>
112427-1D	112439-1B, 2B	112434-1D → 8D		
112409-1C, 2C				

Standards	EM, %T, ABS.	Actual Concentration	Theoretical Concentration	% Recovery	Upper Limit	Lower Limit
Blank	BUFFERS					
#1 4.00		3.98	4.00	99.5	4.29	3.87
#2 7.00		6.99	7.00	99.9	7.07	6.95
#3 10.00		10.00	10.00	100.0	10.12	9.94
#4	TEMP: 27°C		SLOPE: 101.4			
Check Std.	CALIBRATED w/	4.00	10.00	BUFFERS		

Duplicate	#1	#2	RPD (%)	Upper Limit	Lower Limit	Dilution
112439-1B	6.79	6.81	0.29	1.20	0.90	
112434-1D	6.95	6.97	0.29			
112434-8D	7.07	7.07	0			
112428-3B	7.66	7.64	0.26			
112428-4B	7.30	7.30	0			
112428-8D	5.58	5.54	0.72	↓	↓	

Spike Sample	Concentration Before Spike	Amount Added	Concentration After Spike	After - Before	% Recovery	Upper Limit	Lower Limit
N/A							

Spike Recovery Calculation

$$\% \text{ Recovery} = \frac{(\text{Actual} - \text{Original})}{\text{Amount Added}} \times 100$$

Reviewed By [Signature]Date 12/26/91

Relative Percent Difference Calculation

$$\text{RPD} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

Approved By [Signature]Date 12/27/91



3880 Interchange Drive, Houston, Texas 77054 713/660-0901

Wet Chemistry QA/QC Validation Report

Test Code PHSDate 12-24-91Analyst KEWMethod 9045Time 11:00aMatrix SOIL# Of Samples in Set 18Detection Limit NONE

Sample #'s in Set

Units pH UNIT112391-12C112409-3B, 11B, 13B, 18B112410-1B, 3B

Standards	EM, %T, ABS.	Actual Concentration	Theoretical Concentration	% Recovery	Upper Limit	Lower Limit
Blank	<u>BUFFERS</u>					
#1	<u>4.00</u>	<u>4.00</u>	<u>4.00</u>	<u>100.0</u>	<u>4.29</u>	<u>3.87</u>
#2	<u>7.00</u>	<u>6.99</u>	<u>7.00</u>	<u>99.9</u>	<u>7.07</u>	<u>6.94</u>
#3	<u>10.00</u>	<u>10.05</u>	<u>10.00</u>	<u>100.5</u>	<u>10.12</u>	<u>9.94</u>
#4	<u>CALIBRATED w/ 4.00 & 10.00 BUFFER</u>					
Check Std.	<u>TEMP: 21.5°C SLOPE: N/A</u>					

Duplicate	#1	#2	RPD (%)	Upper Limit	Lower Limit	Dilution
<u>112391-12C</u>	<u>9.16</u>	<u>9.13</u>	<u>0.33</u>	<u>1.20</u>	<u>0.90</u>	
<u>112410-1B</u>	<u>9.30</u>	<u>9.28</u>	<u>0.22</u>			
<u>112409-11B</u>	<u>9.23</u>	<u>9.19</u>	<u>0.43</u>			
<u>112409-18B</u>	<u>8.98</u>	<u>8.99</u>	<u>0.11</u>			

Spike Sample	Concentration Before Spike	Amount Added	Concentration After Spike	After - Before	% Recovery	Upper Limit	Lower Limit
<u>NA</u>							

Spike Recovery Calculation

$$\% \text{ Recovery} = \frac{(\text{Actual} - \text{Original}) \times 100}{\text{Amount Added}}$$

Reviewed By Kellal CunkelDate 12/26/91

Relative Percent Difference Calculation

$$\text{RPD} = \frac{(\#1 - \#2) \times 100}{(\#1 + \#2)(0.5)}$$

Approved By Cynthia SchmechelDate 12/26/91



**** SPL Quality Control Report ****
BTEX MATRIX SPIKE/MATRIX SPIKE DUPLICATE

SPL Sample ID: F112324-04A

Reported on: 01/09/92

Matrix: Soil

Analyzed on: 12/23/91

This sample was randomly selected for use in the SPL quality control program. One in twenty samples is fortified, in duplicate, with known concentration of the substance being analyzed.

The result are as follows:

---- SPIKE ANALYSIS ----

Compound	Blank Value	Spike Added µg/Kg	Original Sample Concentration µg/Kg	MS Concentration µg/Kg	MS % Rec#	QC Limits Range
BENZENE	ND	50	ND	43	86	39 - 150 %
TOLUENE	ND	50	ND	43	86	46 - 148 %
ETHYL_BENZENE	ND	50	ND	46	92	32 - 160 %
O XYLENE	ND	50	ND	46	92	32 - 160 %
M AND P XYLENE	ND	100	1	95	94	32 - 160 %

---- SPIKE DUPLICATE ANALYSIS ----

Compound	Spike Added µg/Kg	MSD Concentration µg/Kg	MSD % Rec#	% RPD	RPD Limit	QC Rec Range
BENZENE	50	48	96	11	20	39 - 150 %
TOLUENE	50	44	88	2	20	46 - 148 %
ETHYL_BENZENE	50	47	94	2	20	32 - 160 %
O XYLENE	50	46	92	0	20	32 - 160 %
M AND P XYLENE	100	95	94	0	20	32 - 160 %

SPL Incorporated

VARD911223134400


Cynthia Schreiner, QC Officer



**** SPL Quality Control Report ****
BTEX MATRIX SPIKE/MATRIX SPIKE DUPLICATE

SPL Sample ID: F112412-04A

Reported on: 01/09/92

Matrix: Soil

Analyzed on: 12/26/91

This sample was randomly selected for use in the SPL quality control program. One in twenty samples is fortified, in duplicate, with known concentration of the substance being analyzed.

The result are as follows:

---- SPIKE ANALYSIS ----

Compound	Blank Value	Spike Added µg/Kg	Original Sample Concentration µg/Kg	MS Concentration µg/Kg	MS % Rec#	QC Limits Range
BENZENE	ND	50	ND	66	132	39 - 150 %
TOLUENE	ND	50	1	61	120	46 - 148 %
ETHYL_BENZENE	ND	50	ND	54	108	32 - 160 %
O XYLENE	ND	50	ND	52	104	32 - 160 %
M AND P XYLENE	ND	100	1	104	103	32 - 160 %

---- SPIKE DUPLICATE ANALYSIS ----

Compound	Spike Added µg/Kg	MSD Concentration µg/Kg	MSD % Rec#	% RPD	RPD Limit	QC Rec Range
BENZENE	50	65	130	2	20	39 - 150 %
TOLUENE	50	62	122	2	20	46 - 148 %
ETHYL_BENZENE	50	55	110	2	20	32 - 160 %
O XYLENE	50	52	104	0	20	32 - 160 %
M AND P XYLENE	100	106	105	2	20	32 - 160 %

SPL Incorporated

Cynthia Schreiner
Cynthia Schreiner, QC Officer

VARE911226160000



**** SPL Quality Control Report ****
BTEX MATRIX SPIKE/MATRIX SPIKE DUPLICATE

SPL Sample ID: BLANK MSD

Reported on: 01/09/92

Matrix: Water

Analyzed on: 12/26/91

This sample was randomly selected for use in the SPL quality control program. One in twenty samples is fortified, in duplicate, with known concentration of the substance being analyzed.

The result are as follows:

----- SPIKE ANALYSIS -----

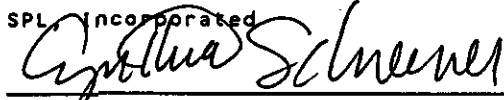
Compound	Blank Value	Spike Added µg/L	Original Sample Concentration µg/L	MS Concentration µg/L	MS % Rec#	QC Limits Range
BENZENE	ND	50	ND	49	98	39 - 150 %
TOLUENE	ND	50	ND	49	98	46 - 148 %
ETHYL_BENZENE	ND	50	ND	46	92	32 - 160 %
O XYLENE	ND	50	ND	49	98	32 - 160 %
M AND P XYLENE	ND	100	ND	99	99	32 - 160 %

----- SPIKE DUPLICATE ANALYSIS -----

Compound	Spike Added µg/L	MSD Concentration µg/L	MSD % Rec#	% RPD	RPD Limit	QC Rec Range
BENZENE	50	46	92	6	20	39 - 150 %
TOLUENE	50	46	92	6	20	46 - 148 %
ETHYL_BENZENE	50	43	86	7	20	32 - 160 %
O XYLENE	50	46	92	6	20	32 - 160 %
M AND P XYLENE	100	92	92	7	20	32 - 160 %

SPL, Incorporated

VARJ911226095500


Cynthia Schreiner, QC Officer



**** SPL Quality Control Report ****
BTEX MATRIX SPIKE/MATRIX SPIKE DUPLICATE

SPL Sample ID: F112452-01A

Reported on: 01/09/92

Matrix: Water

Analyzed on: 12/27/91

This sample was randomly selected for use in the SPL quality control program. One in twenty samples is fortified, in duplicate, with known concentration of the substance being analyzed.

The result are as follows:

---- SPIKE ANALYSIS ----

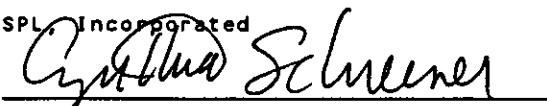
Compound	Blank Value	Spike Added µg/L	Original Sample Concentration µg/L	MS Concentration µg/L	MS % Rec#	QC Limits Range
BENZENE	ND	50	ND	56	112	39 - 150 %
TOLUENE	ND	50	ND	56	112	46 - 148 %
ETHYL_BENZENE	ND	50	ND	50	100	32 - 160 %
O XYLENE	ND	50	ND	52	104	32 - 160 %
M AND P XYLENE	ND	100	ND	111	111	32 - 160 %

---- SPIKE DUPLICATE ANALYSIS ----

Compound	Spike Added µg/L	MSD Concentration µg/L	MSD % Rec#	% RPD	RPD Limit	QC Rec Range
BENZENE	50	54	108	4	20	39 - 150 %
TOLUENE	50	54	108	4	20	46 - 148 %
ETHYL_BENZENE	50	49	98	2	20	32 - 160 %
O XYLENE	50	54	108	4	20	32 - 160 %
M AND P XYLENE	100	110	110	0.9	20	32 - 160 %

SPL Incorporated

VARJ911227081000


Cynthia Schreiner, QC Officer



**** SPL QUALITY CONTROL REPORT ****
TOTAL PETROLEUM HYDROCARBONS (TPH)

SPL sample Id: BLANK
Matrix: WATER

Reported on: 01/09/92
Analyzed on: 12/23/91

This sample was randomly selected for use in the SPL quality control program. One in ten samples is fortified with a known concentration of the substance being analyzed and one in ten samples is analyzed in duplicate. The result are as follows:

-- SPIKE ANALYSIS --

Sample Id	Blank Value	Spike Added mg/L	Original Sample Concentration mg/L	MS Concentration mg/L	MS % Rec
BLANK	ND	409	ND	343	84

-- SPIKE DUPLICATE ANALYSIS --

Sample Id	Spike Added mg/L	MSD Concentration mg/L	MSD % Rec	% RPD
BLANK	409	345	84	0

SPL, Incorporated

Cynthia Schreiner, QC Officer



**** SPL QUALITY CONTROL REPORT ****
TOTAL PETROLEUM HYDROCARBONS (TPH)

SPL sample Id: F112409-48
Matrix: SOIL

Reported on: 01/09/92
Analyzed on: 12/27/91

This sample was randomly selected for use in the SPL quality control program. One in ten samples is fortified with a known concentration of the substance being analyzed and one in ten samples is analyzed in duplicate. The result are as follows:

-- SPIKE ANALYSIS --

Sample Id	Blank Value	Spike Added mg/L	Original Sample Concentration mg/Kg	MS Concentration mg/Kg	MS % Rec
F112409-48	ND	409	42	387	84

-- SPIKE DUPLICATE ANALYSIS --

Sample Id	Spike Added mg/L	MSD Concentration mg/Kg	MSD % Rec	% RPD
F112409-48	409	368	80	5

SPL, Incorporated

Cynthia Schreiner, QC Officer

SPL AA QC FORM

TEST CODE: AgDATE: 01/03/92ANALYST: JmMETHOD: FLAATIME: 13:26DETECTION LIMIT: 0.02# SAMPLES IN SET: 3UNITS: mg/LSAMPLE #'S IN SET: 12487-1A ; 12489-1A ; 12410-3C

STANDARDS	EM, %T, ABS.	ACTUAL CONC.	THEORET. CONC.	%RECOVERY	UPPER LIMIT	LOWER LIMIT
BLANK	0.115	0.000	0.000	—	—	—
#1	0.087	0.500	0.500	100.0	105%	95%
#2	0.174	1.000	1.000	100.0	↓	↓
#3	0.338	1.986	2.000	99.3	↓	↓
#4						
#5						

CONTINUING CALIBRATION

ID	THEORETICAL	ACTUAL	% RECOVERY	UPPER LIMIT	LOWER LIMIT
ICV	0.800	0.778	97.2	110%	90%
LCS	0.050	0.050	100.0	120%	80%
CCV ₁	1.000	1.005	100.5	110%	90%
CCV ₂	↓	1.003	100.3	↓	↓
PB	0	ND	NA	0.02	-0.02

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL})}{(\text{THEORETICAL})} \times 100$$

REVIEWED BY: Meaga MarianAPPROVED BY: Arthur SchreinerDATE: 1/3/92DATE: 1/3/92

TEST:

Ag

MATRIX:

TRIP. liquid

ANALYSIS DATE:

1/3/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
12487-1A	NA	NA	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPI
12487-1A	NA	0.050	0.050	0.049	100.0	98.0	2	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY:

Meagan Mariani

APPROVED BY:

Cynthia Schmeier

DATE:

1/3/92

DATE:

1/3/92

TEST: AgMATRIX: TRIP-SOILANALYSIS DATE: 1/3/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
12410-3C	ND	ND	NA	20	1
12489-1A	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPI
12410-3C	ND	0.050	0.054	0.050	108.0	100.0	7	75 - 125	20
12489-1A	ND	↓	0.049	0.051	98.0	102.0	4	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Neaga MarianAPPROVED BY: Cyrtus SchermerDATE: 1/3/92DATE: 1/3/92

SPL AA QC FORM

TEST CODE: AgDATE: 12/31/91ANALYST: JmMETHOD: FLAATIME: 14:17DETECTION LIMIT: 0.02# SAMPLES IN SET: 5UNITS: mg/LSAMPLE #'S IN SET: 12396-1D, 4D ; 12410-1C ; 12433-1C, 2C[12422-1A GC only]

STANDARDS	EM, %T, ABS.	ACTUAL CONC.	THEORET. CONC.	%RECOVERY	UPPER LIMIT	LOWER LIMIT
BLANK	-0.137	0.000	0.000	—	—	—
#1	0.088	0.500	0.500	100.0	105%	95%
#2	0.172	0.995	1.000	99.5	↓	↓
#3	0.332	1.980	2.000	99.0	↓	↓
#4						
#5						

CONTINUING CALIBRATION

ID	THEORETICAL	ACTUAL	% RECOVERY	UPPER LIMIT	LOWER LIMIT
ICV	0.800	0.803	100.4	110%	90%
LCS	0.050	0.049	98.0	120%	80%
COV ₁	1.000	0.993	99.3	110%	90%
COV ₂	↓	0.992	99.2	↓	↓
PB	0	ND	NA	0.02	-0.02

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL})}{(\text{THEORETICAL})} \times 100$$

REVIEWED BY: Meaga MarionAPPROVED BY: Cynthia SchreinerDATE: 1/2/92DATE: 1/2/92

TEST:

Hg

MATRIX:

TELP-soil

ANALYSIS DATE:

12/31/91

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
12422-1A	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPD
12422-1A	ND	0.050	0.049	0.051	98.0	102.0	4	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY:

Margie Marion

APPROVED BY:

Cynthia Schmeier

DATE:

1/2/92

DATE:

1/2/92

TEST:

Ag

MATRIX:

TCLP- oil

ANALYSIS DATE:

12/31/91

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
SM 124 12396-40	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPD
12396-40	ND	0.050	0.052	0.052	104.0	104.0	0	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY:

Marga Mariani

APPROVED BY:

Cynthia Schmeier

DATE:

12/199

DATE:

1/2/92

TEST CODE: ASDATE: 1/4/92ANALYST: WFLMETHOD: GFAATIME: 08:00DETECTION LIMIT: 6# SAMPLES IN SET: 80UNITS: ug/LSAMPLE #'S IN SET: 12495-1A-3A; 12516-1A-6A; 12517-7A; 12548-1A-6112549-7A-12A; 12550-13A; 12409-1B-2D; 12396-3S-2D; 12409-3C-1S12396-1D-4D; 12476-1A; 12541-1F-3F; 12487-1A; 12410-1C-3C; 12219-1A;

STANDARDS	EM, %T, ABS.	ACTUAL CONC.	THEORET. CONC.	%RECOVERY	UPPER LIMIT	LOWER LIMIT
BLANK	-0.002	0.0	0.0	NA	—	—
#1	0.111	25.0	25.0	100.0%	105.0%	95.0%
#2	0.222	49.9	50.0	99.8%	↓	↓
#3	0.447	100.0	100.0	100.0%	↓	↓
#4						
#5						

CONTINUING CALIBRATION

ID	THEORETICAL	ACTUAL	% RECOVERY	UPPER LIMIT	LOWER LIMIT
ICV	75.0	73.0	97.3%	110.0%	90.0%
LCS	40.0	40.1	100.2%	120.0%	80.0%
CC ₁	50.0	46.9	93.8%	110.0%	90.0%
CC _{1/2}		48.5	97.0%		
CC ₂		45.3	90.6%		
CC ₃		48.7	97.4%		
CC ₄		49.4	98.8%		
CC ₅		47.3	94.6%		
CC ₆		50.1	100.2%		
CC ₇		51.0	102.0%		

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL})}{(\text{THEORETICAL})} \times 100$$

REVIEWED BY: Manga MarianiAPPROVED BY: Cynthia SchmeierDATE: 1/6/92DATE: 1/6/92

TEST CODE: ASDATE: 1/4/92ANALYST: WFLMETHOD: GFAATIME: 08:00DETECTION LIMIT: 6# SAMPLES IN SET: 87UNITS: ug/LSAMPLE #'S IN SET: 12433-1c-2c; 12438-1A; 12439-1A-2A; 12308-1A-8A;
12404-1A-5A; 12400-1c-6c; 12424-1D, 4D, 7D; 12434-1F-4F; 12406-1A
2F-4F.

STANDARDS	EM, %T, ABS.	ACTUAL CONC.	THEORET. CONC.	%RECOVERY	UPPER LIMIT	LOWER LIMIT
BLANK						
#1						
#2						
#3						
#4						
#5						

See Page I

CONTINUING CALIBRATION

ID	THEORETICAL	ACTUAL	% RECOVERY	UPPER LIMIT	LOWER LIMIT
ICV					
LCS					
CCV ₆	50.0	49.9	99.8%	110.0%	90.0%
CCV ₁₀		48.7	97.4%		
CCV ₁₁		49.3	98.6%		
CCV ₁₂		45.3	90.6%		
CCV ₁₃		50.2	100.4%		
PB _{12/13}	0	ND	NA	+6	-6
PB _{12/26}					
PB _{12/30}					
PB _{12/24}					

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL})}{(\text{THEORETICAL})} \times 100$$
REVIEWED BY: Marya MarianAPPROVED BY: Cynthia SchmeierDATE: 1/6/92DATE: 1/6/92

TEST:

As

MATRIX:

81580/red

ANALYSIS DATE:

1/4/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES:	#1	#2	RPD (%)	RPD QC LIMIT:	DILUTION
2517-7A	MS	MS	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%R
2517-7A	MS	40.0	30.2	34.1	75.5%	85.2%	12	75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY:

Meggie Martin

APPROVED BY:

Cynthia Schmeiser

DATE:

1/6/92

DATE:

1/6/92

TEST:

As

MATRIX:

TCLP-Filter

ANALYSIS DATE:

1/4/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES:	=1	=2	RPD (%)	RPD QC LIMIT:	DILUTION
2396-3D	11.7	12.1	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

RELATIVE PERCENT DIFFERENCE (RPD) = $\frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RE
2396-3D	11.7	40.0	45.0	45.9	83.2%	85.5%	2	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

% RECOVERY = $\frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$

REVIEWED BY:

Meara Mariani

APPROVED BY:

Cynthia Schinner

DATE:

1/6/92

DATE:

1/6/92

TEST:

AS

MATRIX:

TCLP soil

ANALYSIS DATE:

1/4/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES:	#1	#2	RPD (%)	RPD QC LIMIT:	DILUTION
2409-4c	24.8	23.5	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

#1

#2

RPD (%)

RPD QC LIMIT:

DILUTION

2409-4c

24.8

23.5

NA

20

1

20

20

20

20

20

20

20

20

20

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	
2409-4c	24.8	40.0	52.2	53.6	68.5%	72.0%	3	75 - 125	20
								75 - 125	20
								75 - 125	20
* - Matrix Interference								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY:

Meagan Marion

APPROVED BY:

Cynthia Greenes

DATE:

1/6/92

TEST: ASMATRIX: TCLP- soilANALYSIS DATE: 1/4/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES:	#1	#2	RPD (%)	RPD QC LIMIT:	DILUTION
2319-1A	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%R
2319-1A	ND	40.0	45.1	44.5	112.8%	111.2%	1	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Meara MarionAPPROVED BY: Cynthia SchreinerDATE: 1/6/92

TEST:

AS

MATRIX:

Water

ANALYSIS DATE:

1/14/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES:	#1	#2	RPD (%)	RPD QC LIMIT:	DILUTION
12334-1A	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%R
12334-1A	ND	40.0	42.8	42.5	107.0%	106.2%	1	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY:

Meaga Mariani

DATE:

1/16/92

APPROVED BY:

Cynthia Schinnerer

DATE:

1/16/92

TEST:

AS

MATRIX:

soil

ANALYSIS DATE:

1/6/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES:	#1	#2	RPD (%)	RPD QC LIMIT:	DILUTION
12318-1A	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RP
12318-1A	ND	40.0	46.9	45.5	117.2%	113.8%	3	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY:

Megha Mariani

APPROVED BY:

Cynthia Schreiner

DATE:

1/6/92

DATE:

1/6/92

TEST:

AS

MATRIX:

TCLP-oil

ANALYSIS DATE:

1/6/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES:	#1	#2	RPD (%)	RPD QC LIMIT:	DILUTION
2396-48	5.7	5.4	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC %RP	
2396-48	5.7	40.0	42.8	48.8	92.8%	97.8%	5	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY:

Meara Marian

APPROVED BY:

Cynthia Schriener

DATE:

1/6/92

DATE:

1/6/92

SPL ICP (METHOD 6010/200.7) STANDARD QC FORM

DATE: 12/31/91TIME: 10:50FILE: 1231AANALYST: MM# SAMPLES IN SET: 17UNITS: mg/LSAMPLE #'s IN SET: 12409-(3C-11C, 13C-18C)12410-(01C)12329-(01C)

TEST CODE	IDL	BLANK		STANDARD	
		EM	CONC	EM	CONC
Bq	0.06	1.5	0.000	28965.0	5.000
Cr	0.02	6.0	0.000	16251.5	5.000

REVIEWED BY: Joan MarroquinAPPROVED BY: Cynthia SchmeierDATE: 1/2/92DATE: 1/2/92

SPL ICP CALIBRATION VERIFICATION

ID	TEST CODE	TRUE CONC.	FOUND CONC.	% RECOVERY	QC LIMITS	
					UPPER	LOWER
ICV	Ba	2.000	2.061	103.0	110%	90%
	Cr	2.208	2.266	102.6		
CCV1	Ba	2.000	2.101	105.0		
	Cr	2.208	2.299	104.1		
CCV2	Ba	2.000	2.108	105.4		
	Cr	2.208	2.337	105.8		
CCV3	Ba	2.000	2.087	104.4		
	Cr	2.208	2.282	^{mg} 103.4		
CCV4	Ba	2.000	2.072	103.6		
	Cr	2.208	2.276	103.1	↓	↓
PB 12/26	Ba	0	N.D.	N/A	0.06	-0.06
	Ba Cr				0.02	-0.02
PB 12/27	Ba				0.06	-0.06
	Cr				0.02	-0.02
PB 12/30	Ba				0.06	-0.06
	Cr				0.02	-0.02
PB 12/23	Ba				0.06	-0.06
	Cr	↓	↓	↓	0.02	-0.02

CALCULATION: % RECOVERY = $\frac{(\text{FOUND CONC.})}{(\text{TRUE CONC.})} \times 100$

REVIEWED BY: Joao MarroquinAPPROVED BY: Cynthia SchreinerDATE: 1/2/92DATE: 1/2/92

FILE: 1231AMATRIX: TCLP- SoilANALYSIS DATE: 12/31/91SPL ICP DUPLICATES DATA

SAMPLE ID	TEST CODE	#1	#2	RPD (%)	QC LIMITS	DILUTION
12409-17c	Ba	0.822	0.822	0	20	1
	Cr	ND	ND	N/A	20	1
					20	
					20	
					20	
					20	
					20	
					20	
					20	
					20	

$$\text{RELATIVE PERCENT DIFFERENCE} = \text{RPD} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPL ICP MATRIX SPIKE DATA

SAMPLE ID	TEST CODE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	% RE
12409-17c	Ba	0.822	0.500	1.253	1.242	86.2	84.0	1	75-125	20
	Cr	ND	0.200	0.194	0.190	97.0	95.0	2	75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20

$$\% \text{ RECOVERY} = \frac{(\text{SPIKED SAMPLE RESULT} - \text{SAMPLE RESULT})}{(\text{SPIKE ADDED})} \times 100$$

REVIEWED BY:

Joan Marroquin

APPROVED BY:

Cynthia Schreiner
1/2/92

FILE: 1231HMATRIX: TCLP - SoilANALYSIS DATE: 12/31/91SPL ICP DUPLICATES DATA

SAMPLE ID	TEST CODE	#1	#2	RPD (%)	QC LIMITS	DILUTION
12409-40	Ba	0.654	0.631	4	20	1
	Cr	N.D.	N.D.	N/A	20	1
					20	
					20	
					20	
					20	
					20	
					20	
					20	
					20	

$$\text{RELATIVE PERCENT DIFFERENCE} = \text{RPD} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPL ICP MATRIX SPIKE DATA

SAMPLE ID	TEST CODE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	% RP
12409-40	Ba	0.654	0.500	1.096	1.084	88.4	86.0	1	75-125	20
	Cr	N.D.	0.200	0.195	0.189	97.5	94.5	3	75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20

$$\% \text{ RECOVERY} = \frac{(\text{SPIKED SAMPLE RESULT} - \text{SAMPLE RESULT})}{(\text{SPIKE ADDED})} \times 100$$

REVIEWED BY: Joelle MarroquinDATE: 1/2/92APPROVED BY: Cynthia SchmeierDATE: 1/2/92

FILE: 1231AMATRIX: TCLP-LiquidANALYSIS DATE: 12/31/91SPL ICP DUPLICATES DATA

SAMPLE ID	TEST CODE	#1	#2	RPD (%)	QC LIMITS	DILUTION
12329-1c	Ba	N.D.	N.D.	N/A	20	1
	Cr	N.D.	N.D.	N/A	20	1
					20	
					20	
					20	
					20	
					20	
					20	
					20	
					20	

$$\text{RELATIVE PERCENT DIFFERENCE} = \text{RPD} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPL ICP MATRIX SPIKE DATA

SAMPLE ID	TEST CODE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	% R
12329-1c	Ba	N.D.	0.500	0.525	0.523	105.0	104.6	0	75-125	20
	Cr	N.D.	0.200	0.230	0.227	115.0	113.5	1	75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20

$$\% \text{ RECOVERY} = \frac{(\text{SPIKED SAMPLE RESULT} - \text{SAMPLE RESULT})}{(\text{SPIKE ADDED})} \times 100$$

REVIEWED BY: Deasi MarroquinAPPROVED BY: Cynthia SchreinerDATE: 1/2/92DATE: 1/2/92

SPL AA QC FORM

TEST CODE: CHDATE: 12/31/91ANALYST: JmMETHOD: FLAATIME: 14:40DETECTION LIMIT: 0.03# SAMPLES IN SET: 5UNITS: mg/LSAMPLE #'S IN SET: 12396-10, 40 ; 12410-1C ; 12433-1C, 2C
[12422-1A & only]

STANDARDS	EM, %T, ABS.	ACTUAL CONC.	THEORET. CONC.	%RECOVERY	UPPER LIMIT	LOWER LIMIT
BLANK	-0.089	0.000	0.000	—	—	—
#1	0.066	0.200	0.200	100.0	105%	95%
#2	0.155	0.495	0.500	99.0	↓	↓
#3	0.282	0.974	1.000	97.4	↓	↓
#4						
#5						

CONTINUING CALIBRATION

ID	THEORETICAL	ACTUAL	% RECOVERY	UPPER LIMIT	LOWER LIMIT
ICV	0.800	0.795	99.4	110%	90%
LCS	0.050	0.059	98.3 ^{mm} 118	120%	80%
CCU	0.500	0.521	104.2	110%	90%
CCU2	↓	0.519	103.8	↓	↓
PB	0	NA	NA	0.03	-0.03

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL})}{(\text{THEORETICAL})} \times 100$$

REVIEWED BY: Meggie MarianiAPPROVED BY: Cynthia SchreinerDATE: 1/2/92DATE: 1/2/92

TEST: CdMATRIX: RLP SoilANALYSIS DATE: 12/31/91

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
12422-1A	NA	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPI
12422-1A	ND	0.050	0.061	0.061	122.0	122.0	0	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Melba MarianiAPPROVED BY: Cynthia SchreinerDATE: 12/1/92DATE: 1/2/92

TEST: CdMATRIX: TEL-OLANALYSIS DATE: 12/31/91

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
12396-40	0.031	0.029	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPI
12396-40	0.031	0.050	0.083	0.083	104.0	104.0	0	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Meaga MarionDATE: 12/31/91 12/19/92APPROVED BY: Capt. [Signature]DATE: 1/2/92

SPL ICP (METHOD 6010/200.7) STANDARD QC FORM

DATE: 1/6/92

TIME: 1121

FILE: 0106A

ANALYST: BR

SAMPLES IN SET: 7

UNITS: mg/L

SAMPLE #'s IN SET: 2497 1A, 2489 1A, 2410 3c, 2396 1d, 4d,
2353 3B, 2420 7c,

TEST CODE	IDL	BLANK		STANDARD	
		EM	CONC	EM	CONC
CR	0.02	15.0	0.000	16533.5	5.000

REVIEWED BY: Margo Marian

APPROVED BY: Cynthia Schmeider

DATE: 1/6/92

DATE: 1/6/92

FILE: 0106AMATRIX: TELP - FilteredANALYSIS DATE: 01/06/92SPL ICP DUPLICATES DATA

SAMPLE ID	TEST CODE	#1	#2	RPD (%)	QC LIMITS	DILUTION
2487 1A	CR	NP	NP	N/A	20	1
					20	
					20	
					20	
					20	
					20	
					20	
					20	
					20	
					20	

$$\text{RELATIVE PERCENT DIFFERENCE} = \text{RPD} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPL ICP MATRIX SPIKE DATA

SAMPLE ID	TEST CODE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	% R
2487 1A	CR	NP	0.200	0.171	0.172	85.5	86.5	1	75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20

$$\% \text{ RECOVERY} = \frac{(\text{SPIKED SAMPLE RESULT} - \text{SAMPLE RESULT})}{(\text{SPIKE ADDED})} \times 100$$

REVIEWED BY: Menga MartinAPPROVED BY: Cynthia SchreinerDATE: 1/6/92DATE: 1/6/92

FILE: 0106AMATRIX: TCLP - SoilANALYSIS DATE: 01/06/92SPL ICP DUPLICATES DATA

SAMPLE ID	TEST CODE	#1	#2	RPD (%)	QC LIMITS	DILUTION
2489 1A	CR	NP	ND	N/A	20	1
					20	
					20	
					20	
					20	
					20	
					20	
					20	
					20	
					20	

$$\text{RELATIVE PERCENT DIFFERENCE} = \text{RPD} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPL ICP MATRIX SPIKE DATA

SAMPLE ID	TEST CODE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	% R
2489 1A	CR	NP	0.200	0.186	0.184	93.0	92.0	1	75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20

$$\% \text{ RECOVERY} = \frac{(\text{SPIKED SAMPLE RESULT} - \text{SAMPLE RESULT})}{(\text{SPIKE ADDED})} \times 100$$

REVIEWED BY: Marga MarianAPPROVED BY: Cynthia SchmeesDATE: 1/6/92DATE: 1/6/92

FILE: 2126 AMATRIX: TCLP - SoilANALYSIS DATE: 01/06/92SPL ICP DUPLICATES DATA

SAMPLE ID	TEST CODE	#1	#2	RPD (%)	QC LIMITS	DILUTION
2410 3c	Ca	ND	ND	N/A	20	1
					20	
					20	
					20	
					20	
					20	
					20	
					20	
					20	
					20	

$$\text{RELATIVE PERCENT DIFFERENCE} = \text{RPD} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPL ICP MATRIX SPIKE DATA

SAMPLE ID	TEST CODE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	% R
2410 3c	Ca	ND	0.200	0.182	0.182	91.0	91.0	0	75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20

$$\% \text{ RECOVERY} = \frac{(\text{SPIKED SAMPLE RESULT} - \text{SAMPLE RESULT})}{(\text{SPIKE ADDED})} \times 100$$

REVIEWED BY: Menga MarionAPPROVED BY: Arthur SchmeesDATE: 11/6/92DATE: 1/6/92

FILE: 2126 AMATRIX: TECP - DILANALYSIS DATE: 01/06/92SPL ICP DUPLICATES DATA

SAMPLE ID	TEST CODE	#1	#2	RPD (%)	QC LIMITS	DILUTION
2396 4d	CR	ND	ND	N/A	20	1
					20	
					20	
					20	
					20	
					20	
					20	
					20	
					20	
					20	

$$\text{RELATIVE PERCENT DIFFERENCE} = \text{RPD} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPL ICP MATRIX SPIKE DATA

SAMPLE ID	TEST CODE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	% R
2396 4d	CR	ND	0.200	0.211	0.201	105.5	100.5	5	75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20

$$\% \text{ RECOVERY} = \frac{(\text{SPIKED SAMPLE RESULT} - \text{SAMPLE RESULT})}{(\text{SPIKE ADDED})} \times 100$$

REVIEWED BY: Meagan MartinAPPROVED BY: Cynthia SchreinerDATE: 1/6/92DATE: 1/6/92

FILE: 0106AMATRIX: WATERANALYSIS DATE: 01/06/92SPL ICP DUPLICATES DATA

SAMPLE ID	TEST CODE	#1	#2	RPD (%)	QC LIMITS	DILUTION
2400 Tc	CR	0.461	0.536	9	20	1
					20	
					20	
					20	
					20	
					20	
					20	
					20	
					20	
					20	

$$\text{RELATIVE PERCENT DIFFERENCE} = \text{RPD} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPL ICP MATRIX SPIKE DATA

SAMPLE ID	TEST CODE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	
2400 Tc	CR	0.461	0.200	0.698	0.640	88.5	89.5	9	75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20

$$\% \text{ RECOVERY} = \frac{(\text{SPIKED SAMPLE RESULT} - \text{SAMPLE RESULT})}{(\text{SPIKE ADDED})} \times 100$$

REVIEWED BY:

Meaga Marican

APPROVED BY:

Capt. Phil Schreiner

DATE:

11/6/92

DATE:

11/6/92

SPL AA QC FORM

TEST CODE: HgDATE: 12/30/91ANALYST: gmMETHOD: CVATIME: 15:57DETECTION LIMIT: 0.6# SAMPLES IN SET: 24UNITS: ug/LSAMPLE #'S IN SET: 12396-1D, 4D ; 12409-3C - ^{11C}18C, 13C - 18C
12410-1C, 3C ; 12433-K, 2C ; 12438-1A ; 12439-1A, 2A

STANDARDS	EM, %T, ABS.	ACTUAL CONC.	THEORET. CONC.	%RECOVERY	UPPER LIMIT	LOWER LIMIT
BLANK	0.006	0.00	0.00	—	—	—
#1	0.015	0.50	0.50	100.0	105%	95%
#2	0.030	1.00	1.00	100.0		
#3	0.157	5.01	5.00	100.2		
#4	0.281	9.75	10.00	97.5	↓	↓
#5						

CONTINUING CALIBRATION

ID	THEORETICAL	ACTUAL	% RECOVERY	UPPER LIMIT	LOWER LIMIT
ICV	2.50	2.63	105.2	120%	80%
LCS	2.00	2.28	114.0		
CCV ₁	2.50	2.57	102.8		
CCV ₂		2.49	99.6		
CCV ₃		2.51	100.4		
CCV ₄		2.18	87.2		
CCV ₅	↓	2.21	88.4	↓	↓
PB 12/24	0	NO	NA	0.6	-0.6
PB 12/28	↓	↓	↓	↓	↓
PB 12/28	↓	↓	↓	↓	↓

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL})}{(\text{THEORETICAL})} \times 100$$
REVIEWED BY: Marga MarianiAPPROVED BY: Cynthia SchreinerDATE: 12/31/91DATE: 12/31/91

TEST: HgMATRIX: TCLP-SOLANALYSIS DATE: 12/30/91

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
12409-18C	ND	ND	NA	20	4
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPI
12409-18C	ND	2.00	1.98	2.09	99.0	104.5	5	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Margo MarianiDATE: 12/31/91APPROVED BY: Cynthia SchmeierDATE: 12/31/91

TEST: HgMATRIX: TCP-liquidANALYSIS DATE: 12/30/91

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
12438-1A	ND	ND	NA	20	4
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPC
12438-1A	NA	2.00	1.73	1.70	86.5	85.0	2	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Meaga MarianiDATE: 12/31/91APPROVED BY: Cynthia SchmeierDATE: 12/31/91

TEST: HgMATRIX: TCLP- soilANALYSIS DATE: 12/30/91

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
12396-1D	ND	ND	NA	20	4
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPD
12396-1D	ND	2.00	0.76	0.68	*38.0	*34.0	11	75 - 125	20
								75 - 125	20
								75 - 125	20
* - Matrix Interference								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Meagan MarionAPPROVED BY: Cynthia SchreinerDATE: 12/31/91DATE: 12/31/91

SPL AA QC FORM

TEST CODE: PbDATE: 12/31/91ANALYST: JmMETHOD: FLAATIME: 13:49DETECTION LIMIT: 0.3# SAMPLES IN SET: 8UNITS: mg/LSAMPLE #'S IN SET: 12396-10, 4D ; 12410-1C , 12422-1A-3A ;
12433-1C, 2C

STANDARDS	EM, %T, ABS.	ACTUAL CONC.	THEORET. CONC.	%RECOVERY	UPPER LIMIT	LOWER LIMIT
BLANK	0.001	0.00	0.00	—	—	—
#1	0.011	0.50	0.50	100.0	105%	95%
#2	0.022	1.00	1.00	100.0	↓	↓
#3	0.045	2.00	2.00	100.0	↓	↓
#4						
#5						

CONTINUING CALIBRATION

ID	THEORETICAL	ACTUAL	% RECOVERY	UPPER LIMIT	LOWER LIMIT
ICV	1.00	1.06	106.0	110%	90%
LCS	0.50	0.51	102.0	120%	80%
CCV ₁	1.00	1.03	103.0	110%	90%
CCV ₂	↓	1.04	104.0	↓	↓
CCV ₃	↓	1.00	100.0	↓	↓
PB	0	NA	NA	0.3	-0.3

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL})}{(\text{THEORETICAL})} \times 100$$
REVIEWED BY: Melissa MarianiAPPROVED BY: Cynthia SchmeierDATE: 1/2/92DATE: 1/2/92

TEST: PbMATRIX: RLP-SoilANALYSIS DATE: 12/31/91

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
12422-1A	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPI
12422-1A	ND	0.50	0.52	0.58	104.0	116.0	11	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Meagan MarionDATE: 1/2/92APPROVED BY: Cynthia SchumeyDATE: 1/2/92

TEST: PbMATRIX: TCLP-silANALYSIS DATE: 12/31/91

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
12396-4D	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPE
12396-4D	ND	0.50	0.51	0.53	102.0	106.0	4	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Meara MarionDATE: 1/2/92APPROVED BY: Cynthia SchreinerDATE: 1/2/92

TEST CODE: SCDATE: 1/6/92ANALYST: WFLMETHOD: GFAATIME: 10:52DETECTION LIMIT: 6# SAMPLES IN SET: 28UNITS: ug/LSAMPLE #'S IN SET: 12424-4D, 7D; 12329-1c; 12410-3c, 1c; 12489-1A; 12487-1A; 12396-2D, 3D, 4D; 12409-1D, 2D, 3c-8c; 12318-1A (Qc only); 12325-1D; 12334-1A (Qc only);

STANDARDS	EM, %T, ABS.	ACTUAL CONC.	THEORET. CONC.	%RECOVERY	UPPER LIMIT	LOWER LIMIT
BLANK	0.003	0.0	0.0	NA	—	—
#1	0.072	25.0	25.0	100.0	105.0%	95.0%
#2	0.162	50.8	50.0	101.6%	↓	↓
#3	0.304	98.7	100.0	98.7%	↓	↓
#4						
#5						

CONTINUING CALIBRATION

ID	THEORETICAL	ACTUAL	% RECOVERY	UPPER LIMIT	LOWER LIMIT
ICV	75.0	74.2	98.9%	110.0%	90.0%
LCS	30.0	29.6	98.7%	120.0%	80.0%
CCV ₁	50.0	48.7	97.4%	110.0%	90.0%
CCV ₂		49.1	98.2%		
CCV ₃		50.8	101.6%		
CCV ₄		48.3	96.6%		
CCV ₅		50.5	101.0%		
CCV ₆		52.6	105.2%		
CCV ₇					

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL})}{(\text{THEORETICAL})} \times 100$$

REVIEWED BY: Meara MaranAPPROVED BY: Cynthia SchreinerDATE: 1/6/92DATE: 1/6/92

11

TEST CODE: SeDATE: 1/6/92ANALYST: WFLMETHOD: GFAATIME: WFLDETECTION LIMIT: 6= SAMPLES IN SET: 28/9UNITS: ug/LSAMPLE #'S IN SET: SEE PAGE I

STANDARDS	EM, %T, ABS.	ACTUAL CONC.	THEORET. CONC.	%RECOVERY	UPPER LIMIT	LOWER LIMIT
BLANK						
#1						
#2						
#3						
#4						
#5						

CONTINUING CALIBRATION

ID	THEORETICAL	ACTUAL	% RECOVERY	UPPER LIMIT	LOWER LIMIT
ICV					
LCS					
PB12/24	0	ND	NA	+6	-6
PB12/24	↓	↓	↓	↓	↓
PB12/31					
PB12/26	↓	↓	↓	↓	↓

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL})}{(\text{THEORETICAL})} \times 100$$
REVIEWED BY: Meagan MurrenAPPROVED BY: Cynthia SchmeierDATE: 1/6/92DATE: 1/6/92

TEST: SeMATRIX: TCLP-Filtered ANALYSIS DATE: 1/6/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES:	#1	#2	RPD (%)	RPD QC LIMIT:	DILUTION
2487-1A	NS	NS	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	% RE
2487-1A	NS	30.0	20.5	20.8	68.3%	69.3%	1	75 - 125	20
								75 - 125	20
								75 - 125	20
*- Matrix Interference								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Meagan MarlanDATE: 1/6/92APPROVED BY: Cynthia SchreinerDATE: 1/6/92

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ANALYSIS DATE:

1/6/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES:	#1	#2	RPD (%)	RPD QC LIMIT:	DILUTION
<u>12410-3c</u>	<u>ND</u>	<u>ND</u>	<u>NA</u>	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%R
<u>12410-3c</u>	<u>ND</u>	<u>30.0</u>	<u>16.0</u>	<u>15.8</u>	<u>33.3%</u>	<u>52.7%</u>	1	75 - 125	2
								75 - 125	2
								75 - 125	2
<u>* - Matrix Interference</u>								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY:

Meara Mariani

APPROVED BY:

Cynthia Schreiner

DATE:

1/6/92

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MATRIX:

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ANALYSIS DATE:

1/6/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES:	#1	#2	RPD (%)	RPD QC LIMIT:	DILUTION
12329-1c	ND	ND	NA	20	5x
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%R
12329-1c	ND	30.0	27.0	24.6	90.5%	82.0%	9	75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY:

Meara Mordan

APPROVED BY:

Cynthia Schreiner

DATE:

1/6/92

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ANALYSIS DATE:

1/6/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES:	#1	#2	RPD (%)	RPD QC LIMIT:	DILUTION
2318-1A	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

RELATIVE PERCENT DIFFERENCE (RPD) = $\frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	
2318-1A	ND	30.0	28.0	27.8	93.3%	92.7%	1	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

% RECOVERY = $\frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$

REVIEWED BY:

Meagan Martin

APPROVED BY:

Cynthia Schmeier

DATE:

1/11/92

DATE:

1/6/92

TEST:

Se

MATRIX:

TELP-Filtered

ANALYSIS DATE:

1/6/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES:	#1	#2	RPD (%)	RPD QC LIMIT:	DILUTION
12396-3D	NS	NS	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

RELATIVE PERCENT DIFFERENCE (RPD) = $\frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	
12396-3D	NS	30.0	18.3	19.1	61.0%	63.7%	4	75 - 125	20
								75 - 125	20
								75 - 125	20
* - Matrix Interference								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

% RECOVERY = $\frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$

REVIEWED BY:

Margo Mariani
11/1/92

APPROVED BY:

Cybil Schneider
DATE: 1/6/92

TEST:

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MATRIX:

TCLP-oil

ANALYSIS DATE:

1/6/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES:	#1	#2	RPD (%)	RPD QC LIMIT:	DILUTION
12396-4D	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

RELATIVE PERCENT DIFFERENCE (RPD) = $\frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	
12396-4D	ND	30.0	25.1	25.1	90.3%	83.7%	8	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

% RECOVERY = $\frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$

REVIEWED BY:

Megga Marlam

APPROVED BY:

Cynthia Schreiner

DATE:

1/6/92

DATE:

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ANALYSIS DATE:

1/6/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT:	DILUTION
12409-4c	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%R
12409-4c	ND	30.0	19.2	21.0	*64.0%	*70.0%	9	75 - 125	2
								75 - 125	2
								75 - 125	2
* - Matrix Interference								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY:

Meaga Marlan

11/1/92

APPROVED BY:

Cynthia Schmeier

DATE:

1/6/92

TEST:

Se

MATRIX:

Water

ANALYSIS DATE:

1/6/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES:	#1	#2	RPD (%)	RPD QC LIMIT:	DILUTION
2334-1A	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%R
2334-1A	ND	30.0	31.2	31.7	104.0%	105.7%	2	75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY:

Margo Mariani

APPROVED BY:

Arthur Schmeider

11109

1/6/92

SPL ICP (METHOD 6010 200.7) STANDARD OC FORM

DATE: 1/4/92TIME: 15:47FILE: 0104BANALYST: DMO= SAMPLES IN SET: 1288 8UNITS: mg/L

SAMPLE #'s IN SET: 12487-1A; 12489-1A; 12396-(1,2,4); 12410-3C;
12353-3B; 12399(1,2E); 12400-7C; 12335(1,2C); 12409-4C (6C)
12335-1C (QC only)

TEST CODE	IDL	BLANK		STANDARD	
		EM	CONC	EM	CONC
Zn	0.006	20.5	0.000	25550.0	5.000
cd	0.009	3.0		21977.5	
Pb	0.1	11.0		20679.5	
Ba	0.06	4.0		30279.0	
Cu	0.03	118.5	✓	16920.0	✓

REVIEWED BY: Maria MariamiAPPROVED BY: Cynthia SchuenerDATE: 1/6/92DATE: 1/6/92

SPL ICP CALIBRATION VERIFICATION

ID	TEST CODE	TRUE CONC.	FOUND CONC.	% RECOVERY	QC LIMITS	
					UPPER	LOWER
ICV	Zn	2.000	1.976	98.8%	110%	90%
	Cd		1.934	96.7%		
	Pb		1.997	99.8%		
	Ba	↓	2.036	101.8%		
	Cr	2.208	2.202	99.7%		
CCV ₁	Zn	2.000	2.022	101.1%		
	Cd		1.938	96.9%		
	Pb		1.980	99.0%		
	Ba	↓	2.046	102.3%		
	Cr	2.208	2.156	97.6%		
CCV ₂	Zn	2.000	2.001	100.0%		
	Cd		1.907	95.4%		
	Pb		1.975	98.8%		
	Ba	↓	2.017	100.8%		
	Cr	2.208	2.161	97.9%		
CCV ₃	Zn	2.000	1.951	97.6%		
	Cd		1.852	92.6%		
	Pb		1.907	95.4%		
	Ba	↓	1.966	98.3%		
	Cr	2.208	2.129	96.4%	↓	↓
— continued next page —						

CALCULATION: % RECOVERY = $\frac{(\text{FOUND CONC.})}{(\text{TRUE CONC.})} \times 100$

REVIEWED BY: Meagan MarionAPPROVED BY: Cynthia SchreinerDATE: 1/6/92DATE: 1/6/92

SPL ICP CALIBRATION VERIFICATION

[illegible]
$$\text{CALCULATION: } \% \text{ RECOVERY} = \frac{(\text{FOUND CONC.})}{(\text{TRUE CONC.})} \times 100$$

REVIEWED BY: Megara Marion

APPROVED BY: Cynthia Schuler

DATE: 11/6/92

DATE: 1/6/92

FILE: 010471MATRIX: 100% Ethanol 201 Extract #2ANALYSIS DATE: 1/2/92

SPL ICP DUPLICATES DATA

SAMPLE ID	TEST CODE	#1	#2	RPD (%)	QC LIMITS	DILUTION
12410-3c	Ba	1.896	1.907	1.00	20	1
	Ca	AD	AD	NA	20	1
					20	
					20	
					20	
					20	
					20	
					20	
					20	
					20	

$$\text{RELATIVE PERCENT DIFFERENCE} = \text{RPD} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPL ICP MATRIX SPIKE DATA

SAMPLE ID	TEST CODE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	% R
12410-3c	Ba	1.896	2.000	3.662	3.773	88.3%	93.8%	3	75-125	20
	Ca	AD	0.2	0.145	0.147	72.5%	73.5%	1	75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20

$$\% \text{ RECOVERY} = \frac{(\text{SPIKED SAMPLE RESULT} - \text{SAMPLE RESULT})}{(\text{SPIKE ADDED})} \times 100$$

REVIEWED BY: Meagan MarianiAPPROVED BY: Cynthia SchreinerDATE: 1/6/92DATE: 1/6/92

SPL ICP DUPLICATES DATA

SAMPLE ID	TEST CODE	#1	#2	RPD (%)	QC LIMITS	DILUTION
12409-4c	Ba	0.645	0.625	3	20	1
	Ca	ND	ND	NA	20	1
					20	
					20	
					20	
					20	
					20	
					20	
					20	
					20	

$$\text{RELATIVE PERCENT DIFFERENCE} = \text{RPD} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPL ICP MATRIX SPIKE DATA

SAMPLE ID	TEST CODE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	% F
12409-4c	Ba	0.645	0.5	1.096	1.084	90.2%	87.8%	1	75-125	20
	Ca	ND	0.2	0.145	0.189	97.5%	94.5%	3	75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20

$$\% \text{ RECOVERY} = \frac{(\text{SPIKED SAMPLE RESULT} - \text{SAMPLE RESULT})}{(\text{SPIKE ADDED})} \times 100$$

REVIEWED BY: Meagan MarianiDATE: 1/6/92APPROVED BY: Guthrie SchwenkeDATE: 1/6/92

SPL ICP DUPLICATES DATA

SAMPLE ID	TEST CODE	#1	#2	RPD (%)	QC LIMITS	DILUTION
12316-4D	Ba	0.328	0.338	3	20	1
	Cr	ND	ND	NA	20	1
					20	
					20	
					20	
					20	
					20	
					20	
					20	
					20	

$$\text{RELATIVE PERCENT DIFFERENCE} = \text{RPD} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPL ICP MATRIX SPIKE DATA

SAMPLE ID	TEST CODE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	% R
12316-4D	Ba	0.328	2.000	2.289	2.263	98.0%	96.8%	1	75-125	20
	Cr	ND	0.200	0.164	0.157	82.0%	78.5%	4	75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20

$$\% \text{ RECOVERY} = \frac{(\text{SPIKED SAMPLE RESULT} - \text{SAMPLE RESULT})}{(\text{SPIKE ADDED})} \times 100$$

REVIEWED BY: Mary MarianiDATE: 11/1/92APPROVED BY: Cynthia SchreinerDATE: 1/6/92

SPL ICP DUPLICATES DATA

SAMPLE ID	TEST CODE	#1	#2	RPD (%)	QC LIMITS	DILUTION
12335-1c	Zn	0.368	0.367	0	20	1
	Cd	ND	ND	NA	20	1
	Pb	1.081	1.075	1	20	1
	Ba	0.126	0.126	NA	20	1
	Cd	ND	ND	NA	20	1
					20	
					20	
					20	
					20	
					20	

$$\text{RELATIVE PERCENT DIFFERENCE} = \text{RPD} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPL ICP MATRIX SPIKE DATA

SAMPLE ID	TEST CODE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	% R
12335-1c	Zn	0.368	0.5	0.870	0.879	100.4%	100.2%	1	75-125	20
	Cd	ND	0.05	0.045	0.046	90.0%	92.0%	2	75-125	20
	Pb	1.081	0.5	1.542	1.526	92.2%	89.0%	1	75-125	20
	Ba	0.126	2.0	2.208	2.200	104.1%	103.7%	0	75-125	20
	Cd	ND	0.2	0.160	0.158	80.0%	79.0%	1	75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20

$$\% \text{ RECOVERY} = \frac{(\text{SPIKED SAMPLE RESULT} - \text{SAMPLE RESULT})}{(\text{SPIKE ADDED})} \times 100$$

REVIEWED BY: Meagan MarianiAPPROVED BY: Cy. Anna SchreinerDATE: 11/6/92DATE: 1/4/92

SPL QA/QC FORM

EST CODE: 0116DATE: 12/23/91ANALYST: JE IFMMETHOD: 413.1TIME: 2:30 P.M.MATRIX: Overhead waterSAMPLES IN SET: 28DET. LIMIT: 1

SAMPLE #'s IN SET: 12374-1A, 12448-1A, 12450-1A →
12381-1A, 12383-1C → 3C, 12399-1A, 1B, 2A, 2B, 12410-2A, 12426-1A →
1A, 4B, 5A → 9A, 12441-1E → 3E.

STANDARDS	EM, %T, ABS.	ACTUAL CONC.	THEORET. CONC.	%RECOVERY	UPPER LIMIT	LOWER LIMIT
BLANK		21	21			
#1 STD		4.54	4.77	106%	118.2	76.8
#2						
#3						
#4						
LCS						

MATRIX SPIKE DATA

SAMPLE ID	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS	
								% REC	% RPD
SPK #1 1-2 OMSG SPK	ND	4.76	4.29	4.25	90%	89%	0%	128.3 / 66.9	
SPK #2 1-2 OMSG SPK	ND	4.76	4.49	4.51	94%	95%	0%	128.3 / 66.9	

% RECOVERY = $\frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Added}} \times 100$

RPD (Relative Percent Difference) = $\frac{(\text{Conc MS}) - (\text{Conc MSD})}{(\text{Conc MS} + \text{Conc MSD})(0.5)} \times 100$

REVIEWED BY: Bruce VandenbergAPPROVED BY: Cynthia SchreinerDATE: 12.27.91DATE: 12/27/91



8880 Interchange Drive, Houston, Texas 77054 713/660-0901

Wet Chemistry QA/QC Validation Report

Test Code PHSDate 12-24-91Analyst KEWMethod 9045Time 11:00aMatrix SOIL# Of Samples in Set 18Detection Limit NONE

Sample #'s in Set

Units pH UNIT112391-12C112409-3B, 11B, 13B, 18B112410-1B, 3B

Standards	EM, %T, ABS.	Actual Concentration	Theoretical Concentration	% Recovery	Upper Limit	Lower Limit
Blank	BUFFERS					
#1 4.00		4.00	4.00	100.0	4.29	3.87
#2 7.00		6.99	7.00	99.9	7.07	6.94
#3 10.00		10.05	10.00	100.5	10.12	9.94
#4		CALIBRATED w/ 4.00 & 10.00 BUFFER				
Check Std.		TEMP: 21.5°C	SLOPE: N/A			

Duplicate	#1	#2	RPD (%)	Upper Limit	Lower Limit	Dilution
112391-12C	9.16	9.13	0.33	1.20	0.90	
112410-1B	9.30	9.28	0.22			
112409-11B	9.23	9.19	0.43			
112409-18B	8.98	8.99	0.11	↓	↓	

Spike Sample	Concentration Before Spike	Amount Added	Concentration After Spike	After - Before	% Recovery	Upper Limit	Lower Limit
NA							

Spike Recovery Calculation

$$\% \text{ Recovery} = \frac{(\text{Actual} - \text{Original})}{\text{Amount Added}} \times 100$$

Reviewed By

Date

12/26/91

Relative Percent Difference Calculation

$$\text{RPD} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

Approved By

Date

12/26/91



**** SPL Quality Control Report ****
BTEX MATRIX SPIKE/MATRIX SPIKE DUPLICATE

SPL Sample ID: F112324-04A

Reported on: 01/07/92

Matrix: Soil

Analyzed on: 12/22/91

This sample was randomly selected for use in the SPL quality control program. One in twenty samples is fortified, in duplicate, with known concentration of the substance being analyzed.

The result are as follows:

----- SPIKE ANALYSIS -----

Compound	Blank Value	Spike Added µg/Kg	Original Sample Concentration µg/Kg	MS Concentration µg/Kg	MS % Rec#	QC Limits Range
BENZENE	ND	50	ND	55	110	39 - 150 %
TOLUENE	ND	50	ND	52	104	46 - 148 %
ETHYL_BENZENE	ND	50	ND	48	96	32 - 160 %
O XYLENE	ND	50	ND	53	106	32 - 160 %
M AND P XYLENE	ND	100	1	97	96	32 - 160 %

----- SPIKE DUPLICATE ANALYSIS -----

Compound	Spike Added µg/Kg	MSD Concentration µg/Kg	MSD % Rec#	% RPD	RPD Limit	QC Rec Range
BENZENE	50	55	110	0	20	39 - 150 %
TOLUENE	50	51	102	2	20	46 - 148 %
ETHYL_BENZENE	50	48	96	0	20	32 - 160 %
O XYLENE	50	54	108	2	20	32 - 160 %
M AND P XYLENE	100	98	97	1	20	32 - 160 %

SPL, Incorporated

Cynthia Schreiner
Cynthia Schreiner, QC Officer

VARE91122233500



**** SPL Quality Control Report ****
BTEX MATRIX SPIKE/MATRIX SPIKE DUPLICATE

SPL Sample ID: F112409-17A

Reported on: 01/07/92

Matrix: Soil

Analyzed on: 12/24/91

This sample was randomly selected for use in the SPL quality control program. One in twenty samples is fortified, in duplicate, with known concentration of the substance being analyzed.

The result are as follows:

---- SPIKE ANALYSIS ----

Compound	Blank Value	Spike Added µg/Kg	Original Sample Concentration µg/Kg	MS Concentration µg/Kg	MS % Rec#	QC Limits Range
BENZENE	ND	50	ND	46	92	39 - 150 %
TOLUENE	ND	50	ND	46	92	46 - 148 %
ETHYL_BENZENE	ND	50	ND	47	94	32 - 160 %
O XYLENE	ND	50	ND	51	102	32 - 160 %
M AND P XYLENE	ND	100	1	101	100	32 - 160 %

---- SPIKE DUPLICATE ANALYSIS ----

Compound	Spike Added µg/Kg	MSD Concentration µg/Kg	MSD % Rec#	% RPD	RPD Limit	QC Rec Range
BENZENE	50	54	108	16	20	39 - 150 %
TOLUENE	50	53	106	14	20	46 - 148 %
ETHYL_BENZENE	50	53	106	12	20	32 - 160 %
O XYLENE	50	50	100	2	20	32 - 160 %
M AND P XYLENE	100	105	104	4	20	32 - 160 %

SPL Incorporated

Cynthia Schreiner
Cynthia Schreiner, QC Officer

VAR0911224131800



**** SPL QUALITY CONTROL REPORT ****
TOTAL PETROLEUM HYDROCARBONS (TPH)

SPL sample Id: F112409-48
Matrix: SOIL

Reported on: 01/07/92
Analyzed on: 12/27/91

This sample was randomly selected for use in the SPL quality control program. One in ten samples is fortified with a known concentration of the substance being analyzed and one in ten samples is analyzed in duplicate. The result are as follows:

-- SPIKE ANALYSIS --

Sample Id	Blank Value	Spike Added mg/L	Original Sample Concentration mg/Kg	MS Concentration mg/Kg	MS % Rec
F112409-48	ND	409	42	387	84

-- SPIKE DUPLICATE ANALYSIS --

Sample Id	Spike Added mg/L	MSD Concentration mg/Kg	MSD % Rec	% RPD
F112409-48	409	368	80	5

SPL, Incorporated


Cynthia Schreiner, QC Officer

Toxcon Engineering Company, Inc.
 3334 Richmond Ave., #200
 Houston, Texas 77098
 (713) 520-7667

Analysis Request and Chain of Custody Record

Project No.		Client/Project Name		Project Location		Analysis Requested		Laboratory Remarks	
504867.00		Baker Hughes / Hobbs		2800 West Marland Hobbs, New Mexico					
Field Sample No./ Identification	Date and Time	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	Analysis Requested	Laboratory Remarks			
WW12-1991	12/17/91 17:00	1 L. glass	liquid	HCl Ice	TPH (418.1)				
WW12-1991	12/19/91 17:00	3 VOAS	liquid	HCl Ice	BTEX (8020)				
WW12-1991	12/19/91 17:00	802. glass	liquid	Ice	pH				
WW12-1991	12/19/91 17:00	802. plastic	liquid	HNO3 Ice	PCA metals + TCLP extraction (6010/7000/1311)				
Sump: L	12/19/91 16:30	1 L. glass	liquid	HCl Ice	TPH (418.1)				
Sump: L	12/19/91 16:30	3 VOAS	liquid	HCl Ice	BTEX (8020)				
Sump: L	12/19/91 16:30	802. glass	liquid	Ice	pH				
Sump: L	12/19/91 16:30	802. plastic	liquid	HNO3 Ice	PCA metals + TCLP extraction (6010/7000/1311)				
Sump: S	12/19/91 16:30	1602. WMG	sludge (solid)	Ice	TPH (418.1) pH PCA metals + TCLP extraction (6010/7000/1311)				
BI: 5/6	12/20/91 16:30	1602 WMG	soil	Ice					
Relinquished by: <i>R. Simon</i> Signature		Relinquished by: <i>R. Simon</i> Signature		Received by: <i>R. Simon</i> Signature		Intact Date: 12/20/91 Time: 5:00 PM			
Relinquished by: <i>R. Simon</i> Signature		Relinquished by: <i>R. Simon</i> Signature		Received by: <i>R. Simon</i> Signature		Intact Date: 12/20/91 Time: 5:00 PM			
Relinquished by: <i>R. Simon</i> Signature		Relinquished by: <i>R. Simon</i> Signature		Received by: <i>R. Simon</i> Signature		Intact Date: 12/20/91 Time: 5:00 PM			
SAMPLER REMARKS: SIMON: EET		Received for laboratory: <i>R. Simon</i> Signature		Received for laboratory: <i>R. Simon</i> Signature		Laboratory No. Date: 12/20/91 Time: 5:00 PM			
Seal #		Seal #		Seal #		Seal #			

Toxcon Engineering Company, Inc.
3334 Richmond Ave., #200
Houston, Texas 77098
(713) 520-7667

Project No.	Client/Project Name	Project Location									
504867.00	Baker Hughes/Hobbs	2800 West Marland Hobbs, New Mexico									
Field Sample No./ Identification	Date and Time	Q.C.	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS			
B1: 9/10	12/20/91 9:05 A	✓		16oz. WMG	Soil	Ice	TPH (418.1) BTEX (8020) PH ACRA metals + TELP estimation (6010/7000/1311)				
B2: 5/6	12/20/91 9:50	✓									
B2: 19/11	12/20/91 10:00 A	✓									
B3: 5/6	12/20/91 11:05	✓									
B3: 10/11	12/20/91 11:25	✓									
B4: 5/6	12/20/91 10:40	✓									
B4: 10/11	12/20/91 10:45	✓									
B5: 7.5/8.5	12/20/91 11:50	✓									
B5: 11/12	12/20/91 12:15	✓						HOLD THIS SAMPLE UNTIL R. POKLUDA C			
B6: 9.5/10.5	12/20/91 13:25	✓					8240 8240				
Relinquished by: (Signature)			Date: 12/20/91			Received by: (Signature)			Intact		
Relinquished by: (Signature)			Date:			Received by: (Signature)			Intact		
Relinquished by: (Signature)			Date:			Received by: (Signature)			Intact		
STMON EEL						Received for laboratory: (Signature)			Laboratory No.		
Simon: EEL						Data Results to:					
Seal #						R. Pokluda c/o Simon: EEL (Tox Con)					

Toxcon Engineering Company, Inc.
 3334 Richmond Ave., #200
 Houston, Texas 77098
 (713) 520-7667

Analysis Request and Chain of Custody Record

Project No. 50486700		Client/Project Name Baker Hughes/Hobbs		Project Location 2800 West Merland Hobbs, New Mexico				
Field Sample No./ Identification	Date and Time	g/g	g/g	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS
B6: 14.5/15.5	12/30/91 1340	✓		16oz. WNG	Soil	Ice	TPH (48.1) RCRA metals + TCLP extraction (60107000/1311)	
B61: 0/1	12/30/91 1115A	✓						
B62: 0/1	12/30/91 1045A	✓						
B63: 0/1	12/30/91 1015A	✓						
B64: 0/1	12/30/91 1005A	✓						
Effluent	12/30/91	✓		16oz WNG	Water-lig	Ice	Oil & Grease (413.1) pH	Time 12:40 PM
B5-15/16.5	12/30/91 12:50P	✓		16oz WNG	Soil	Ice	TPH (48.1) RCRA metals + TCLP extraction (60107000/1311)	
Samplers: (Signature)		Relinquished by: (Signature)		Date: 12/20/91 Time: 5:00 PM		Received by: (Signature)		Date: Time: Intact
B. Finkbeiner		B. Finkbeiner				Received by: (Signature)		Date: Time: Intact
B. Finkbeiner		B. Finkbeiner				Received by: (Signature)		Date: Time: Intact
Simon: EEL		Simon: EEL				Received for laboratory: (Signature)		Date: Time: Laboratory No.
Simon: EEL		Simon: EEL				Data Results to: Roger P. Kula c/o Simon: EEL (Toxcon)		

SAMPLER REMARKS:

Seal #

F1.12.409/410

SPL HOUSTON ENVIRONMENTAL LABORATORY

SAMPLE LOGIN CHECKLIST

DATE: 12/20/91 TIME: 5:00 P.M. CLIENT NO. _____
 LOT NO. _____ CONTRACT NO. _____

CLIENT SAMPLE NOS. WW121991, WW121991, WW121991,
WW121991, Sump-L, Sump-L, Sump-L, Sump-L,
Sump-S, B1: 5/4, B1: 9/10, B2: 5/6, B2: 10/11, B3: 5/6
 SPL SAMPLE NOS.: B3: 10/11, B4: 5/6, B4: 10/11, B5: 7.5/8.5,
B5: 11/12, B6: 9.5/10.5,

- | | YES | NO |
|---|--|---|
| 1. Is a Chain-of-Custody form present? | ☒ | ☐ |
| 2. Is the COC properly completed? | ☒ | ☐ |
| If no, describe what is incomplete: | | |
| _____ | | |
| _____ | | |
| If no, has the client been contacted about it? | | |
| (Attach subsequent documentation from client about the situation) | | |
| 3. Is airbill/packing list/bill of lading with shipment? | ☒ | ☐ |
| If yes, ID#: <u>1550553572, 1550553561</u> | | |
| 4. Is a USEPA Traffic Report present? | ☐ | ☒ |
| 5. Is a USEPA SAS Packing List present? | ☐ | ☒ |
| 6. Are custody seals present on the package? | ☒ | ☐ |
| If yes, were they intact upon receipt? | | |
| 7. Are all samples tagged or labeled? | ☒ | ☐ |
| Do the sample tags/labels match the COC? | | |
| If no, has the client been contacted about it? | | |
| (Attach subsequent documentation from client about the situation) | | |
| 8. Do all shipping documents agree? | ☒ | ☐ |
| If no, describe what is in nonconformity: | | |
| _____ | | |
| _____ | | |
| 9. Condition/temperature of shipping container: | <u>40C</u> | |
| 10. Condition/temperature of sample bottles: | <u>good</u> | |
| 11. Sample Disposal?: | SPL disposal ☒ | Return to client ☐ |

NOTES (reference item number if applicable): _____

ATTEST: Natale Banks DATE: 12/20/91
 DELIVERED FOR RESOLUTION: REC'D DATE: _____
 RESOLVED: _____ DATE: _____

December 1991 Investigation
(Volatiles by Method 8240)



SPL, INC.

REPORT APPROVAL SHEET

WORK ORDER NUMBER: F 2-01-017

Approved for release by:

R. Schrynemeeckers Date: 1/17/92

R. Schrynemeeckers, Laboratory Director

M. Scott Schreiner Date: 1/17/92
for C. Schreiner, QA Manager



CASE NARRATIVE

QUALITY CONTROL RESULTS SUMMARY

WORK ORDER NO.: F2-01-017

SAMPLE NO.: 01A, 02A, 03A, and 04A

The Soil samples in this case wre analyzed outside of the sample hold-time at the client's request. Due to the lack of sufficient sample, the detection limits for fraction 01A are increased.

SOUTHERN PETROLEUM LABORATORIES

A handwritten signature in black ink, appearing to read "Greg Tatosian", is written over a horizontal line.

Greg Tatosian
GCMS Supervisor



ANALYTICAL RESULTS

Volatile Organics by USEPA Method 8240

Client ID: B5: 11/12
SPL ID: F20101701A
Analyst: JC

Matrix: SOIL
Dilution: 5
% Moisture: 16
Level: LOW

Received: 20-Dec-91
Extracted: *****
Analyzed: 10-Jan-92

C o m p o u n d	Concentration, ug/Kg	
	Amount	M D L
Acetone	ND	60
Benzene	ND	30
Bromodichloromethane	ND	30
Bromoform	ND	30
Bromomethane	ND	60
2-Butanone	ND	120
Carbon Disulfide	ND	30
Carbon Tetrachloride	ND	30
Chlorobenzene	ND	30
Chloroethane	ND	60
2-Chloroethylvinylether	ND	60
Chloroform	ND	30
Chloromethane	ND	60
Dibromochloromethane	ND	30
1,1-Dichloroethane	ND	30
1,2-Dichloroethane	ND	30
1,1-Dichloroethene	ND	30
Trans-1,2-Dichloroethene	ND	30
1,2-Dichloropropane	ND	30
Cis-1,3-Dichloropropene	ND	30
Trans-1,3-Dichloropropene	ND	30
Ethylbenzene	ND	30
2-Hexanone	ND	60
4-Methyl-2-Pentanone	ND	60
Methylene Chloride	230	30
Styrene	ND	30
1,1,2,2-Tetrachloroethane	ND	30
Tetrachloroethene	ND	30
Toluene	ND	30
1,1,1-Trichloroethane	ND	30
1,1,2-Trichloroethane	ND	30
Trichloroethene	ND	30
Trichlorofluoromethane	ND	30
Vinyl Acetate	ND	60
Vinyl Chloride	ND	60
Total Xylenes	ND	30

SURROGATES

1,2-Dichloroethane-D4	110% Recovery
Toluene-D8	104% Recovery
4-Bromofluorobenzene	83% Recovery

ND-Not Detected. MDL-Method detection limit.



ANALYTICAL RESULTS

Volatile Organics by USEPA Method 8240

Client ID: B6: 9.5/10.5

SPL ID: F20101702A

Analyst: JC

Matrix: SOIL

Dilution: 1

% Moisture: 10

Level: LOW

Received: 20-Dec-91

Extracted: *****

Analyzed: 10-Jan-92

Compound	Concentration, ug/Kg	
	Amount	M D L
Acetone	45	11
Benzene	ND	6
Bromodichloromethane	ND	6
Bromoform	ND	6
Bromomethane	ND	11
2-Butanone	ND	22
Carbon Disulfide	ND	6
Carbon Tetrachloride	ND	6
Chlorobenzene	ND	6
Chloroethane	ND	11
2-Chloroethylvinylether	ND	11
Chloroform	ND	6
Chloromethane	ND	11
Dibromochloromethane	ND	6
1,1-Dichloroethane	ND	6
1,2-Dichloroethane	ND	6
1,1-Dichloroethene	ND	6
Trans-1,2-Dichloroethene	ND	6
1,2-Dichloropropane	ND	6
Cis-1,3-Dichloropropene	ND	6
Trans-1,3-Dichloropropene	ND	6
Ethylbenzene	6	6
2-Hexanone	ND	11
4-Methyl-2-Pentanone	ND	11
Methylene Chloride	41	6
Styrene	ND	6
1,1,2,2-Tetrachloroethane	ND	6
Tetrachloroethene	ND	6
Toluene	ND	6
1,1,1-Trichloroethane	ND	6
1,1,2-Trichloroethane	ND	6
Trichloroethene	ND	6
Trichlorofluoromethane	ND	6
Vinyl Acetate	ND	11
Vinyl Chloride	ND	11
Total Xylenes	11	6

SURROGATES

1,2-Dichloroethane-D4

105% Recovery

Toluene-D8

113% Recovery

4-Bromofluorobenzene

89% Recovery

ND-Not Detected. MDL-Method detection limit.

**ANALYTICAL RESULTS**

Volatile Organics by USEPA Method 8240

Client ID: B6: 14.5/15.3

SPL ID: F20101703A

Analyst: JC

Matrix: SOIL

Dilution: 1

% Moisture: 11

Level: LOW

Received: 20-Dec-91

Extracted: *****

Analyzed: 10-Jan-92

C o m p o u n d	Concentration, ug/Kg	
	Amount	M D L
Acetone	270	11
Benzene	ND	6
Bromodichloromethane	ND	6
Bromoform	ND	6
Bromomethane	ND	11
2-Butanone	ND	22
Carbon Disulfide	ND	6
Carbon Tetrachloride	ND	6
Chlorobenzene	ND	6
Chloroethane	ND	11
2-Chloroethylvinylether	ND	11
Chloroform	ND	6
Chloromethane	ND	11
Dibromochloromethane	ND	6
1,1-Dichloroethane	ND	6
1,2-Dichloroethane	ND	6
1,1-Dichloroethene	ND	6
Trans-1,2-Dichloroethene	ND	6
1,2-Dichloropropane	ND	6
Cis-1,3-Dichloropropene	ND	6
Trans-1,3-Dichloropropene	ND	6
Ethylbenzene	ND	6
2-Hexanone	ND	11
4-Methyl-2-Pentanone	ND	11
Methylene Chloride	36	6
Styrene	ND	6
1,1,2,2-Tetrachloroethane	ND	6
Tetrachloroethene	ND	6
Toluene	ND	6
1,1,1-Trichloroethane	ND	6
1,1,2-Trichloroethane	ND	6
Trichloroethene	ND	6
Trichlorofluoromethane	ND	6
Vinyl Acetate	ND	11
Vinyl Chloride	ND	11
Total Xylenes	11	6

SURROGATES

1,2-Dichloroethane-D4

106% Recovery

Toluene-D8

112% Recovery

4-Bromofluorobenzene

96% Recovery

ND-Not Detected.

MDL-Method detection limit.



ANALYTICAL RESULTS

Volatile Organics by USEPA Method 8240

Client ID: B5: 15/16.5

SPL ID: F20101704A

Analyst: JC

Matrix: SOIL

Dilution: 1

% Moisture: 11

Level: LOW

Received: 20-Dec-91

Extracted: *****

Analyzed: 10-Jan-92

C o m p o u n d	Concentration, ug/Kg	
	Amount	M D L
Acetone	300	11
Benzene	ND	6
Bromodichloromethane	ND	6
Bromoform	ND	6
Bromomethane	ND	11
2-Butanone	26	22
Carbon Disulfide	ND	6
Carbon Tetrachloride	ND	6
Chlorobenzene	ND	6
Chloroethane	ND	11
2-Chloroethylvinylether	ND	11
Chloroform	ND	6
Chloromethane	ND	11
Dibromochloromethane	ND	6
1,1-Dichloroethane	ND	6
1,2-Dichloroethane	ND	6
1,1-Dichloroethene	ND	6
Trans-1,2-Dichloroethene	ND	6
1,2-Dichloropropane	ND	6
Cis-1,3-Dichloropropene	ND	6
Trans-1,3-Dichloropropene	ND	6
Ethylbenzene	61	6
2-Hexanone	ND	11
4-Methyl-2-Pentanone	ND	11
Methylene Chloride	31	6
Styrene	63	6
1,1,2,2-Tetrachloroethane	ND	6
Tetrachloroethene	ND	6
Toluene	ND	6
1,1,1-Trichloroethane	ND	6
1,1,2-Trichloroethane	ND	6
Trichloroethene	ND	6
Trichlorofluoromethane	ND	6
Vinyl Acetate	ND	11
Vinyl Chloride	ND	11
Total Xylenes	110	6

SURROGATES

1,2-Dichloroethane-D4	103% Recovery
Toluene-D8	116% Recovery
4-Bromofluorobenzene	105% Recovery

ND-Not Detected. MDL-Method detection limit.

2B
SOIL VOLATILE SURROGATE RECOVERY

Lab Name: SPL HOUSTON Contract: _____

Lab Code: SPL Case No.: 201017 SAS No.: _____ SDG No.: 201017

Level: (low/med) LOW

	EPA SAMPLE NO.	S1 (TOL) #	S2 (BFB) #	S3 (DCE) #	OTHER	TOT OUT
01	B5_11_12	104	83	110	0	0
02	B5_15_16_5	116	105	103	0	0
03	B6_14_5_15_5	112	96	106	0	0
04	B6_9_5_10_5	113	89	105	0	0
05	VBKSOIL01	103	86	109	0	0

QC LIMITS

S1 (TOL) = Toluene-d8 (81-117)
S2 (BFB) = Bromofluorobenzene (74-121)
S3 (DCE) = 1,2-Dichloroethane-d4 (70-121)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPL HOUSTON Contract: _____

Lab Code: SPL Case No.: 201074 SAS No.: _____ SDG No.: 201017

Matrix Spike - EPA Sample No.: HA-1(8_5_) Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	65.8	0	69.5	106	59-172
Trichloroethene	65.8	0	75.1	114	62-137
Benzene	65.8	0	73.7	112	66-142
Toluene	65.8	0	76.6	116	59-139
Chlorobenzene	65.8	0	67.9	103	60-133

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS	
					RPD	REC.
1,1-Dichloroethene	65.8	65.5	100	6	22	59-172
Trichloroethene	65.8	69.6	106	7	24	62-137
Benzene	65.8	71.2	108	4	21	66-142
Toluene	65.8	77.5	118	-2	21	59-139
Chlorobenzene	65.8	68.3	104	-1	21	60-133

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits

COMMENTS: 8240S,201074,,HA-1 (8.5'),L,S,F20107403B,V,E,5.0 GRS,
PACK,0109VL2B1,0109BFB1,0109VLBB1,,,,45/3-220@8,INST B1,

4A
VOLATILE METHOD BLANK SUMMARY

Lab Name: SPL HOUSTON Contract: _____
Lab Code: SPL Case No.: 201017 SAS No.: _____ SDG No.: 201017
Lab File ID: 0110VLSB1 Lab Sample ID: VLBLK010110C
Date Analyzed: 01/10/92 Time Analyzed: 1041
Matrix: (soil/water) SOIL Level: (low/med) LOW
Instrument ID: B1

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	B5_11_12	F20101701A	V101701	1455
02	B5_15_16_5	F20101704A	V101704	1659
03	B6_14_5_15_5	F20101703A	V101703	1617
04	B6_9_5_10_5	F20101702A	V101702	1536

COMMENTS: SPLINC,BLANK,,VBLK01,L,,VLBLK010110C,V,B,
PACK,0110VL2B1,0110BFB1,0110VLBB1,,,,45/3-220@8,INST B1,



ANALYTICAL RESULTS

Volatile Organics by USEPA Method 8240

Client ID: VBLKSOIL01
SPL ID: VLBLK010110C
Analyst: JC

Matrix: SOIL
Dilution: 1
% Moisture: NA
Level: LOW

Received:
Extracted: *****
Analyzed: 10-Jan-92

C o m p o u n d	Concentration, ug/Kg	
	Amount	M D L
Acetone	ND	10
Benzene	ND	5
Bromodichloromethane	ND	5
Bromoform	ND	5
Bromomethane	ND	10
2-Butanone	ND	20
Carbon Disulfide	ND	5
Carbon Tetrachloride	ND	5
Chlorobenzene	ND	5
Chloroethane	ND	10
2-Chloroethylvinylether	ND	10
Chloroform	ND	5
Chloromethane	ND	10
Dibromochloromethane	ND	5
1,1-Dichloroethane	ND	5
1,2-Dichloroethane	ND	5
1,1-Dichloroethene	ND	5
Trans-1,2-Dichloroethene	ND	5
1,2-Dichloropropane	ND	5
Cis-1,3-Dichloropropene	ND	5
Trans-1,3-Dichloropropene	ND	5
Ethylbenzene	ND	5
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
Methylene Chloride	5	5
Styrene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
1,1,1-Trichloroethane	ND	5
1,1,2-Trichloroethane	ND	5
Trichloroethene	ND	5
Trichlorofluoromethane	ND	5
Vinyl Acetate	ND	10
Vinyl Chloride	ND	10
Total Xylenes	ND	5

SURROGATES

1,2-Dichloroethane-D4	109% Recovery
Toluene-D8	103% Recovery
4-Bromofluorobenzene	86% Recovery

ND-Not Detected. MDL-Method detection limit.



8880 Interchange Drive, Houston, Texas 77054 713/660-0901

Wet Chemistry QA/QC Validation Report

Test Code MOISEPDate 1.8.92Analyst KewMethod GRAVIMETRICTime 9:15aMatrix SOIL# Of Samples in Set 4Detection Limit 1

Sample #'s in Set

Units % WEIGHT201017-1A201058-1F → 3F

Standards	EM, %T, ABS.	Actual Concentration	Theoretical Concentration	% Recovery	Upper Limit	Lower Limit
Blank						
#1	<u>N/A</u>					
#2						
#3						
#4						
Check Std.						

Duplicate	#1	#2	RPD (%)	Upper Limit	Lower Limit	Dilution
<u>201058-3F</u>	<u>35</u>	<u>34</u>	<u>2.9</u>	<u>30.4</u>	<u>22.4</u>	

Spike Sample	Concentration Before Spike	Amount Added	Concentration After Spike	After - Before	% Recovery	Upper Limit	Lower Limit
<u>N/A</u>							

Spike Recovery Calculation

$$\% \text{ Recovery} = \frac{(\text{Actual} - \text{Original})}{\text{Amount Added}} \times 100$$

Reviewed By

Relative Percent Difference Calculation

$$\text{RPD} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

Approved By



8880 Interchange Drive, Houston, Texas 77054 713/660-0901

Wet Chemistry QA/QC Validation Report

Test Code MOISEPDate 1.14.92Analyst KEWMethod GRAVIMETRICTime 8:10aMatrix SOIL# Of Samples in Set 8Detection Limit 1

Sample #'s in Set	<u>201050-1A</u>	<u>201020-1A → 2A</u>		Units <u>% WEIGHT</u>
		<u>201017-2A → 4A</u>		
		<u>201105-1A → 2A</u>		

Standards	EM, %T, ABS.	Actual Concentration	Theoretical Concentration	% Recovery	Upper Limit	Lower Limit
Blank						
#1	<u>N/A</u>					
#2						
#3						
#4						
Check Std.						

Duplicate	#1	#2	RPD (%)	Upper Limit	Lower Limit	Dilution
<u>201020-2A</u>	<u>21</u>	<u>22</u>	<u>4.7</u>	<u>30.4</u>	<u>22.4</u>	

Spike Sample	Concentration Before Spike	Amount Added	Concentration After Spike	After - Before	% Recovery	Upper Limit	Lower Limit
<u>N/A</u>							

Spike Recovery Calculation

$$\% \text{ Recovery} = \frac{(\text{Actual} - \text{Original})}{\text{Amount Added}} \times 100$$

Reviewed By Reuben ClarkDate 1/15/92

Relative Percent Difference Calculation

$$\text{RPD} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

Approved By Anthony SchreinerDate 1/15/92



Environmental Laboratory
8880 Interchange Drive
Houston, Texas 77054
713/660-0901

Analysis Request and Chain of Custody Record

Project No.				Client/Project Name				Project Location			
504867.00				TOXCON				BAKER Hughes-Hobbs NM.			
Field Sample No./ Identification	Date and Time	Cat	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS			
B5-11/2	12/20 12:15						8240				
B6-9.5	12/20 13:25						8240				
B6-14.5	12/20 13:40						8240				
B5-15/16.5	12/20 12:50						8240				
Samplers: (Signature)	Relinquished by: (Signature) B. Martiney			Date:	Received by: (Signature)	Date:	Intact				
Affiliation	Relinquished by: (Signature)			Time:	Time:	Time:	Intact				
	Relinquished by: (Signature)			Date:	Received by: (Signature)	Date:	Intact				
				Time:	Time:	Time:	Intact				
SAMPLER REMARKS:				Received for laboratory: (Signature)				Laboratory No.			
				Date: 2/21							
				Time:							
				Data Results to:							

Case # 11-17-409410

RECEIVED

JUN 18 1992

**OIL CONSERVATION DIV.
SANTA FE**

**APPENDIX G
Certified Analytical Results
and
Chain of Custody**

(2 of 2)

**February 1992 Investigation
(Various Analytical Results)**



SPL, INC.

REPORT APPROVAL SHEET

WORK ORDER NUMBER: F2-02-440

Approved for release by:

W. Scott Sample Date: 3/17/92

S. Sample, Project Management Supervisor

Cynthia Schreiner Date: 3/17/92

C. Schreiner, Quality Assurance Manager



CASE NARRATIVE

QUALITY CONTROL RESULTS SUMMARY

WORK ORDER NO.: F2-02-440

SAMPLE NO.: 03B

The sample in question was analyzed for the target compound list by USEPA method 8240. However, due to matrix interference, the surrogate recovery for Bromfluorobenzene was outside QC/QC limits.

SOUTHERN PETROLEUM LABORATORIES

A handwritten signature in black ink, which appears to read "Emmanuel Young", is written over a horizontal line.

**Emmanuel Young
GCMS Supervisor**



CLIENT NAME: Simon Hydro-Search
CLIENT ID: WW22492

SPL #: F202440-01D

TCLP SUMMARY

PARAMETER	UNCORRECTED RESULTS (mg/L)	CORRECTED RESULTS * (mg/L)	REGULATORY LIMIT (mg/L)
ARSENIC	< 0.007	< 0.007	5.0
BARIUM	0.696	0.707	100.0
CADMIUM	< 0.03	< 0.03	1.0
CHROMIUM	< 0.02	< 0.02	5.0
LEAD	< 0.3	< 0.3	5.0
MERCURY	< 0.002	< 0.002	0.2
SELENIUM	< 0.007	< 0.007	1.0
SILVER	< 0.02	< 0.02	5.0

* = Reference Federal Register 55, 26986 (6/29/90), RCRA Toxicity Characteristic Final Rule.

** = These two compounds are quantitated together.

Compounds reflect terminology and regulatory limits as presented in Federal Register, (3/29/90 & 6/29/90).



CLIENT NAME: Simon Hydro-Search
CLIENT ID: B8:26-27.5

SPL #: F202440-02C

TCLP SUMMARY

PARAMETER	UNCORRECTED RESULTS (mg/L)	CORRECTED RESULTS * (mg/L)	REGULATORY LIMIT (mg/L)
ARSENIC	< 0.007	< 0.007	5.0
BARIUM	2.17	2.58	100.0
CADMIUM	< 0.03	< 0.03	1.0
CHROMIUM	< 0.02	< 0.02	5.0
LEAD	< 0.3	< 0.3	5.0
MERCURY	< 0.002	< 0.002	0.2
SELENIUM	< 0.007	< 0.007	1.0
SILVER	< 0.02	< 0.02	5.0

* = Reference Federal Register 55, 26986 (6/29/90), RCRA Toxicity Characteristic Final Rule.

** = These two compounds are quantitated together.

Compounds reflect terminology and regulatory limits as presented in Federal Register, (3/29/90 & 6/29/90).



CLIENT NAME: Simon Hydro-Search
CLIENT ID: B8:31.5-33.5

SPL #: F202440-03C

TCLP SUMMARY

PARAMETER	UNCORRECTED RESULTS (mg/L)	CORRECTED RESULTS * (mg/L)	REGULATORY LIMIT (mg/L)
ARSENIC	< 0.007	< 0.007	5.0
BARIUM	2.28	2.71	100.0
CADMIUM	< 0.03	< 0.03	1.0
CHROMIUM	< 0.02	< 0.02	5.0
LEAD	< 0.3	< 0.3	5.0
MERCURY	< 0.002	< 0.002	0.2
SELENIUM	< 0.007	< 0.007	1.0
SILVER	< 0.02	< 0.02	5.0

* = Reference Federal Register 55, 26986 (6/29/90), RCRA Toxicity Characteristic Final Rule.

** = These two compounds are quantitated together.

Compounds reflect terminology and regulatory limits as presented in Federal Register, (3/29/90 & 6/29/90).



Simon Hydro-Search
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F202440-01A
Invoice #: 406483
Report Date: 03/16/92

504867.00
WW22492

Date Received: 02/27/92
Date Collected: 02/24/92 12:10:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Petroleum Hydrocarbons METHOD 418.1	ND mg/L	1	03/03/92	JC/DC

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.

SPL ENVIRONMENTAL LABORATORIES, INC.



Simon Hydro-Search
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F202440-01B
Invoice #: 406483
Report Date: 03/16/92

504867.00
WW22492

Date Received: 02/27/92
Date Collected: 02/24/92 12:10:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
pH METHOD 150.1	7.35 pH units		02/28/92	KEW

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.

SPL ENVIRONMENTAL LABORATORIES, INC.



ANALYTICAL RESULTS

Volatile Organics by USEPA Method 8240

Client ID: WW22492
SPL ID: F20244001C
Analyst: KAREN

Matrix: WATER
Dilution: 5
% Moisture: NA
Level: LOW

Received: 27-Feb-92
Extracted: *****
Analyzed: 06-Mar-92

Compound	Concentration, ug/L	
	Amount	M D L
Acetone	ND	50
Benzene	820	25
Bromodichloromethane	ND	25
Bromoform	ND	25
Bromomethane	ND	50
2-Butanone	ND	100
Carbon Disulfide	ND	25
Carbon Tetrachloride	ND	25
Chlorobenzene	ND	25
Chloroethane	ND	50
2-Chloroethylvinylether	ND	50
Chloroform	ND	25
Chloromethane	ND	50
Dibromochloromethane	ND	25
1,1-Dichloroethane	ND	25
1,2-Dichloroethane	ND	25
1,1-Dichloroethene	ND	25
Trans-1,2-Dichloroethene	ND	25
1,2-Dichloropropene	ND	25
Cis-1,3-Dichloropropene	ND	25
Trans-1,3-Dichloropropene	ND	25
Ethylbenzene	200	25
2-Hexanone	ND	50
4-Methyl-2-Pentanone	ND	50
Methylene Chloride	ND	25
Styrene	ND	25
1,1,2,2-Tetrachloroethane	ND	25
Tetrachloroethene	ND	25
Toluene	300	25
1,1,1-Trichloroethane	ND	25
1,1,2-Trichloroethane	ND	25
Trichloroethene	ND	25
Trichlorofluoromethane	ND	25
Vinyl Acetate	ND	50
Vinyl Chloride	ND	50
Total Xylenes	300	25

SURROGATES

1,2-Dichloroethane-D4	D	* Recovery
Toluene-D8	89%	Recovery
4-Bromofluorobenzene	88%	Recovery

ND - Not Detected.

MDL - Method detection limit.

* - Surrogates out of range



Simon Hydro-Search
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F202440-01D
Invoice #: 406483
Report Date: 03/16/92

504867.00
WW22492

Date Received: 02/27/92
Date Collected: 02/24/92 12:10:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Silver, TCLP Leachate METHOD 7760	ND mg/L	0.02	03/03/92	JM
Arsenic, TCLP Leachate METHOD 7060	ND mg/L	0.007	03/04/92	WFL
Barium, TCLP Leachate METHOD 6010	0.696 mg/L	0.007	03/04/92	DQ
Cadmium, TCLP Leachate METHOD 7130	ND mg/L	0.03	03/03/92	JM
Chromium, TCLP Leachate METHOD 6010	ND mg/L	0.02	03/04/92	DQ
Mercury, TCLP Leachate METHOD 7470	ND mg/L	0.002	03/04/92	JM
Acid Digestion - Microwave EPA CLP SOW	Complete		03/02/92	CG
Lead, TCLP Leachate METHOD 7420	ND mg/L	0.3	03/03/92	JM
TCLP Leachate extraction METHOD 1311	Complete		02/29/92	ET
Selenium, TCLP Leachate METHOD 7740	ND mg/L	0.007	03/04/92	WFL

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.

SPL ENVIRONMENTAL LABORATORIES, INC.



Simon Hydro-Search
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F202440-02A
Invoice #: 406483
Report Date: 03/16/92

504867.00
B8:26-27.5

Date Received: 02/27/92
Date Collected: 02/25/92 11:10:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Petroleum Hydrocarbons METHOD 418.1	1800 mg/Kg	10	02/28/92	LJ/DC

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.

SPL ENVIRONMENTAL LABORATORIES, INC.



ANALYTICAL RESULTS

Volatile Organics by USEPA Method 8240

Client ID: B8:26-27.5
SPL ID: F20244002B
Analyst: JC

Matrix: SOIL
Dilution: 5
% Moisture: 5
Level: LOW

Received: 27-Feb-92
Extracted: *****
Analysed: 05-Mar-92

C o m p o u n d	Concentration, ug/Kg	
	Amount	M D L
Acetone	ND	53
Benzene	ND	26
Bromodichloromethane	ND	26
Bromoform	ND	26
Bromomethane	ND	53
2-Butanone	ND	110
Carbon Disulfide	ND	26
Carbon Tetrachloride	ND	26
Chlorobenzene	ND	26
Chloroethane	ND	53
2-Chloroethylvinylether	ND	53
Chloroform	ND	26
Chloromethane	ND	53
Dibromochloromethane	ND	26
1,1-Dichloroethane	ND	26
1,2-Dichloroethane	ND	26
1,1-Dichloroethene	ND	26
Trans-1,2-Dichloroethene	ND	26
1,2-Dichloropropane	ND	26
Cis-1,3-Dichloropropene	ND	26
Trans-1,3-Dichloropropene	ND	26
Ethylbenzene	61	26
2-Hexanone	ND	53
4-Methyl-2-Pentanone	ND	53
Methylene Chloride	ND	26
Styrene	ND	26
1,1,2,2-Tetrachloroethane	ND	26
Tetrachloroethene	ND	26
Toluene	ND	26
1,1,1-Trichloroethane	ND	26
1,1,2-Trichloroethane	ND	26
Trichloroethene	ND	26
Trichlorofluoromethane	ND	26
Vinyl Acetate	ND	53
Vinyl Chloride	ND	53
Total Xylenes	300	26

SURROGATES

1,2-Dichloroethane-D4	94%	Recovery
Toluene-D8	106%	Recovery
4-Bromofluorobenzene	120%	Recovery

ND - Not Detected.

MDL - Method detection limit.

* - Surrogates out of range



Simon Hydro-Search
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F202440-02C
Invoice #: 406483
Report Date: 03/16/92

504867.00
B8:26-27.5

Date Received: 02/27/92
Date Collected: 02/25/92 11:10:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Silver, TCLP Leachate METHOD 7760	ND mg/L	0.02	03/03/92	JM
Arsenic, TCLP Leachate METHOD 7060	ND mg/L	0.007	03/04/92	WFL
Barium, TCLP Leachate METHOD 6010	2.17 mg/L	0.007	03/04/92	DQ
Cadmium, TCLP Leachate METHOD 7130	ND mg/L	0.03	03/03/92	JM
Chromium, TCLP Leachate METHOD 6010	ND mg/L	0.02	03/04/92	DQ
Mercury, TCLP Leachate METHOD 7470	ND mg/L	0.002	03/04/92	JM
Acid Digestion - Microwave EPA CLP SOW	Complete		03/02/92	CG
Lead, TCLP Leachate METHOD 7420	ND mg/L	0.3	03/03/92	JM
TCLP Leachate extraction METHOD 1311	Complete		02/29/92	ET
Selenium, TCLP Leachate METHOD 7740	ND mg/L	0.007	03/04/92	WFL

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.

SPL ENVIRONMENTAL LABORATORIES, INC.



Simon Hydro-Search
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F202440-03A
Invoice #: 406483
Report Date: 03/16/92

504867.00
B8:31.5-33.5

Date Received: 02/27/92
Date Collected: 02/25/92 11:40:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Petroleum Hydrocarbons METHOD 418.1	6600 mg/Kg	100	02/28/92	LJ/DC

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.

SPL ENVIRONMENTAL LABORATORIES, INC.



ANALYTICAL RESULTS

Volatile Organics by USEPA Method 8240

Client ID: B8:31.5-33.5
SPL ID: F20244003B
Analyst: JC

Matrix: SOIL
Dilution: 5
% Moisture: 12
Level: LOW

Received: 27-Feb-92
Extracted: *****
Analyzed: 05-Mar-92

Compound	Concentration, ug/Kg	
	Amount	MDL
Acetone	ND	57
Benzene	ND	28
Bromodichloromethane	ND	28
Bromoform	ND	28
Bromomethane	ND	57
2-Butanone	ND	110
Carbon Disulfide	ND	28
Carbon Tetrachloride	ND	28
Chlorobenzene	ND	28
Chloroethane	ND	57
2-Chloroethylvinylether	ND	57
Chloroform	ND	28
Chloromethane	ND	57
Dibromochloromethane	ND	28
1,1-Dichloroethane	ND	28
1,2-Dichloroethane	ND	28
1,1-Dichloroethene	ND	28
Trans-1,2-Dichloroethene	ND	28
1,2-Dichloropropane	ND	28
Cis-1,3-Dichloropropene	ND	28
Trans-1,3-Dichloropropene	ND	28
Ethylbenzene	560	28
2-Hexanone	ND	57
4-Methyl-2-Pentanone	ND	57
Methylene Chloride	ND	28
Styrene	ND	28
1,1,2,2-Tetrachloroethane	ND	28
Tetrachloroethene	ND	28
Toluene	ND	28
1,1,1-Trichloroethane	ND	28
1,1,2-Trichloroethane	ND	28
Trichloroethene	ND	28
Trichlorofluoromethane	ND	28
Vinyl Acetate	ND	57
Vinyl Chloride	ND	57
Total Xylenes	2100	28

SURROGATES

1,2-Dichloroethane-D4	94% Recovery
Toluene-D8	102% Recovery
4-Bromofluorobenzene	138% * Recovery

ND - Not Detected.

MDL - Method detection limit.

* - Surrogates out of range



Simon Hydro-Search
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F202440-03C
Invoice #: 406483
Report Date: 03/16/92

504867.00
B8:31.5-33.5

Date Received: 02/27/92
Date Collected: 02/25/92 11:40:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Silver, TCLP Leachate METHOD 7760	ND mg/L	0.02	03/03/92	JM
Arsenic, TCLP Leachate METHOD 7060	ND mg/L	0.007	03/04/92	WFL
Barium, TCLP Leachate METHOD 6010	2.28 mg/L	0.007	03/04/92	DQ
Cadmium, TCLP Leachate METHOD 7130	ND mg/L	0.03	03/03/92	JM
Chromium, TCLP Leachate METHOD 6010	ND mg/L	0.02	03/04/92	DQ
Mercury, TCLP Leachate METHOD 7470	ND mg/L	0.002	03/04/92	JM
Acid Digestion - Microwave EPA CLP SOW	Complete		03/02/92	CG
Lead, TCLP Leachate METHOD 7420	ND mg/L	0.3	03/03/92	JM
TCLP Leachate extraction METHOD 1311	Complete		02/29/92	ET
Selenium, TCLP Leachate METHOD 7740	ND mg/L	0.007	03/04/92	WFL

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.

SPL ENVIRONMENTAL LABORATORIES, INC.

2A
WATER VOLATILE SURROGATE RECOVERY

Lab Name: SPL HOUSTON Contract: _____

Lab Code: SPL Case No.: 202440 SAS No.: _____ SDG No.: 202440

	EPA SAMPLE NO.	S1 (TOL) #	S2 (BFB) #	S3 (DCE) #	OTHER	TOT OUT
01	WW22492	89	88	0 *	0	1
02	VBLK01	95	95	0 *	0	1

QC LIMITS

S1 (TOL) = Toluene-d8 (88-110)
S2 (BFB) = Bromofluorobenzene (86-115)
S3 (DCE) = 1,2-Dichloroethane-d4 (76-114)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

2B
SOIL VOLATILE SURROGATE RECOVERY

Lab Name: SPL HOUSTON Contract: _____

Lab Code: SPL Case No.: 202440 SAS No.: _____ SDG No.: 202440

Level: (low/med) LOW

	EPA SAMPLE NO.	S1 (TOL) #	S2 (BFB) #	S3 (DCE) #	OTHER	TOT OUT
01	B8_26-27_5	106	120	94	0	0
02	B8_31_5-33_5	102	138 *	94	0	1
03	VBK01	104	105	93	0	0

QC LIMITS

S1 (TOL) = Toluene-d8 (81-117)
S2 (BFB) = Bromofluorobenzene (74-121)
S3 (DCE) = 1,2-Dichloroethane-d4 (70-121)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPL HOUSTON Contract: _____Lab Code: SPL Case No.: 202334 SAS No.: _____ SDG No.: 202440Matrix Spike - EPA Sample No.: 101

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	50.0	0	54.1	108	61-145
Trichloroethene	50.0	0	54.0	108	71-120
Benzene	50.0	0	55.8	112	76-127
Toluene	50.0	0	56.5	113	76-125
Chlorobenzene	50.0	0	57.1	114	75-130

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS	
					RPD	REC.
1,1-Dichloroethene	50.0	53.5	107	1	14	61-145
Trichloroethene	50.0	51.5	103	5	14	71-120
Benzene	50.0	56.3	113	-1	11	76-127
Toluene	50.0	54.7	109	4	13	76-125
Chlorobenzene	50.0	56.0	112	2	13	75-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limitsSpike Recovery: 0 out of 10 outside limitsCOMMENTS: ETBZV TOLV,202334,,101,L,W,F20233411A,V,E,
C,G0117,G0118,G0119,

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPL HOUSTON Contract: _____Lab Code: SPL Case No.: 202211 SAS No.: _____ SDG No.: 202440Matrix Spike - EPA Sample No.: MW4-6 0-8 0 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	60.2	0	66.0	110	59-172
Trichloroethene	60.2	0	76.6	127	62-137
Benzene	60.2	0	74.7	124	66-142
Toluene	60.2	0	58.7	98	59-139
Chlorobenzene	60.2	0	65.1	108	60-133

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	REC.
1,1-Dichloroethene	60.2	69.3	115	-4	22	59-172
Trichloroethene	60.2	76.0	126	1	24	62-137
Benzene	60.2	73.4	122	2	21	66-142
Toluene	60.2	61.3	102	-4	21	59-139
Chlorobenzene	60.2	65.8	109	-1	21	60-133

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limitsSpike Recovery: 0 out of 10 outside limitsCOMMENTS: 8240S, 202211, MW4-6.0-8.0, L, S, F20221105A, V, E, 5.0 GRS,
PACK, 0220VS2B2, 0220BFB2, 0220VSBB2, , , , 45/3-22008, INST B1,

4A
VOLATILE METHOD BLANK SUMMARY

Lab Name: SPL HOUSTON Contract: _____
Lab Code: SPL Case No.: 202440 SAS No.: _____ SDG No.: 202440
Lab File ID: 0305VSBB1 Lab Sample ID: VSBLK010305B
Date Analyzed: 03/05/92 Time Analyzed: 1038
Matrix: (soil/water) SOIL Level: (low/med) LOW
Instrument ID: B1

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	B8_26-27_5	F20244002B	V244002	1357
02	B8_31_5-33_5	F20244003B	V244003	1436

COMMENTS: SPLINC, BLANK, , VBLK01, L, S, VSBLK010305B, V, B,
PACK, 0305VS2B1, 0305BFB1, 0305VSBB1, , , , 45/3-220@8, INST B1,



ANALYTICAL RESULTS

Volatile Organics by USEPA Method 8240

Client ID: VBLK01
SPL ID: VSBLK010305B
Analyst: JC

Matrix: SOIL
Dilution: 1
% Moisture: NA
Level: LOW

Received:
Extracted: *****
Analyzed: 05-Mar-92

Compound	Concentration, ug/Kg	
	Amount	MDL
Acetone	ND	10
Benzene	ND	5
Bromodichloromethane	ND	5
Bromoform	ND	5
Bromomethane	ND	10
2-Butanone	ND	20
Carbon Disulfide	ND	5
Carbon Tetrachloride	ND	5
Chlorobenzene	ND	5
Chloroethane	ND	10
2-Chloroethylvinylether	ND	10
Chloroform	ND	5
Chloromethane	ND	10
Dibromochloromethane	ND	5
1,1-Dichloroethane	ND	5
1,2-Dichloroethane	ND	5
1,1-Dichloroethene	ND	5
Trans-1,2-Dichloroethane	ND	5
1,2-Dichloropropane	ND	5
Cis-1,3-Dichloropropene	ND	5
Trans-1,3-Dichloropropene	ND	5
Ethylbenzene	ND	5
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
Methylene Chloride	8	5
Styrene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethane	ND	5
Toluene	ND	5
1,1,1-Trichloroethane	ND	5
1,1,2-Trichloroethane	ND	5
Trichloroethene	ND	5
Trichlorofluoromethane	ND	5
Vinyl Acetate	ND	10
Vinyl Chloride	ND	10
Total Xylenes	ND	5

SURROGATES

1,2-Dichloroethane-D4	93%	Recovery
Toluene-D8	104%	Recovery
4-Bromofluorobenzene	105%	Recovery

ND - Not Detected.

MDL - Method detection limit.

* - Surrogates out of range

4A
VOLATILE METHOD BLANK SUMMARY

Lab Name: SPL HOUSTON Contract: _____
Lab Code: SPL Case No.: 202440 SAS No.: _____ SDG No.: 202440
Lab File ID: G0150 Lab Sample ID: VLBLK010306G
Date Analyzed: 03/06/92 Time Analyzed: 1514
Matrix: (soil/water) WATER Level: (low/med) LOW
Instrument ID: G

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	WW22492	F20244001C	G0151	1717

COMMENTS: SPL, BLANK, , VBLK01, L, W, VLBLK010221G, V, B,
C, G0149, G0148, G0150



ANALYTICAL RESULTS

Volatile Organics by USEPA Method 8240

Client ID: VBLK01
SPL ID: VLBLK010306G
Analyst: KAREN

Matrix: WATER
Dilution: 1
% Moisture: NA
Level: LOW

Received:
Extracted: *****
Analyzed: 06-Mar-92

Compound	Concentration, ug/L	
	Amount	M D L
Acetone	20	10
Benzene	ND	5
Bromodichloromethane	ND	5
Bromoform	ND	5
Bromomethane	ND	10
2-Butanone	ND	20
Carbon Disulfide	ND	5
Carbon Tetrachloride	ND	5
Chlorobenzene	ND	5
Chloroethane	ND	10
2-Chloroethylvinylether	ND	10
Chloroform	ND	5
Chloromethane	ND	10
Dibromochloromethane	ND	5
1,1-Dichloroethane	ND	5
1,2-Dichloroethane	ND	5
1,1-Dichloroethene	ND	5
Trans-1,2-Dichloroethene	ND	5
1,2-Dichloropropane	ND	5
Cis-1,3-Dichloropropane	ND	5
Trans-1,3-Dichloropropene	ND	5
Ethylbenzene	ND	5
2-Hexanone	12	10
4-Methyl-2-Pentanone	14	10
Methylene Chloride	ND	5
Styrene	ND	5
1,1,2,2-Tetrachloroethane	7	5
Tetrachloroethene	ND	5
Toluene	ND	5
1,1,1-Trichloroethane	ND	5
1,1,2-Trichloroethane	ND	5
Trichloroethene	ND	5
Trichlorofluoromethane	ND	5
Vinyl Acetate	ND	10
Vinyl Chloride	ND	10
Total Xylenes	ND	5

SURROGATES

1,2-Dichloroethane-D4	D	* Recovery
Toluene-D8	95%	Recovery
4-Bromofluorobenzene	95%	Recovery

ND - Not Detected.

MDL - Method detection limit.

* - Surrogates out of range

SPL AA QC FORM

TEST CODE: AgDATE: 3/3/92ANALYST: gmMETHOD: FLAATIME: 13:49DETECTION LIMIT: 0.02# SAMPLES IN SET: 26UNITS: mg/LSAMPLE #'S IN SET: 02442-1C; 02389-1C-8C; 02447-1C-4C, 6C; 02440-1D, 2C, 3C
(02428-2C GC only); 02417-1C; 02443-1C; 02447-7C, 8C; 02484-1A-4A, 5B (02411-1A GC only)

STANDARDS	EM, %T, ABS.	ACTUAL CONC.	THEORET. CONC.	%RECOVERY	UPPER LIMIT	LOWER LIMIT
BLANK	0.000	0.000	0.000	—	—	—
#1	0.059	0.500	0.500	100.0	105%	95%
#2	0.114	0.994	1.000	99.4	↓	↓
#3	0.223	1.985	2.000	99.2	↓	↓
#4						
#5						

CONTINUING CALIBRATION

ID	THEORETICAL	ACTUAL	% RECOVERY	UPPER LIMIT	LOWER LIMIT
ICV	0.800	0.797	99.6	110%	90%
LCS	1.000	0.992	99.2	120%	80%
CCV ₁		1.033	103.3	110%	90%
CCV ₂		1.018	101.8		
CCV ₃		1.008	100.8		
CCV ₄		1.002	100.2		
CCV ₅		0.999	99.9		
CCV ₆		1.015	101.5		
CCV ₇	↓	1.016	101.6	↓	↓
Cont'd on next page gm.					

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL})}{(\text{THEORETICAL})} \times 100$$
REVIEWED BY: Margo MarianiAPPROVED BY: William SchuelerDATE: 3/3/92DATE: 3/3/92

SPL AA QC FORM

TEST CODE: AgDATE: 3/3/92ANALYST: gmMETHOD: FLAATIME: 13:49DETECTION LIMIT: 0.02

SAMPLES IN SET: _____

UNITS: mg/L

SAMPLE #'S IN SET: _____

STANDARDS	EM, %T, ABS.	ACTUAL CONC.	THEORET. CONC.	%RECOVERY	UPPER LIMIT	LOWER LIMIT
BLANK						
#1						
#2						
#3						
#4						
#5						

CONTINUING CALIBRATION

Cont'd

ID	THEORETICAL	ACTUAL	% RECOVERY	UPPER LIMIT	LOWER LIMIT
<i>gm</i> Lev PB 1/28	0	ND	NA	0.02	-0.02
<i>gm</i> LGS PB 3/2 Micro-water	↓	↓	↓	↓	↓
PB 3/8 EVF	↓	↓	↓	↓	↓
PB 3/27	↓	↓	↓	↓	↓
PB 3/2 water	↓	↓	↓	↓	↓

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL})}{(\text{THEORETICAL})} \times 100$$
REVIEWED BY: Melinda MarionAPPROVED BY: Cynthia SchenkerDATE: 3/3/92DATE: 3/3/92

TEST:

Ag

MATRIX:

7CP-liquid

ANALYSIS DATE:

3/3/92
2/27/92 9m

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
02428-2C	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPD
02428-2C	ND	0.050	0.047	0.047	94.0	94.0	0	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY:

Meoza Motion

DATE:

3/3/92

APPROVED BY:

Cynthia S. Sinner

DATE:

3/3/92

TEST: AgMATRIX: waterANALYSIS DATE: 3/3/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
02411-1C	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPD
02411-1C	ND	0.050	0.049	0.046	98.0	92.0	6	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Meagan Mariani
DATE: 3/3/92APPROVED BY: C. J. Schuerer
DATE: 3/3/92

TEST: AgMATRIX: TCLP- soilANALYSIS DATE: 3/3/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
02389-1C	0.011	0.010	NA	20	1
02442-1C	0.013	0.011	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPD
02389-1C	0.011	0.050	0.053	0.055	84.0	88.0	4	75 - 125	20
02442-1C	0.013	↓	0.062	0.064	98.0	102.0	3	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Meagan MarionDATE: 3/3/92APPROVED BY: Cynthia SchreinerDATE: 3/3/92

0304B

SPL AA QC FORM

TEST CODE:

AS

DATE:

3/4/92

ANALYST:

WFL

METHOD:

GFAA

TIME:

10:47

DETECTION LIMIT:

6

SAMPLES IN SET:

21

UNITS:

ug/L

SAMPLE #'S IN SET:

02389-1c-8c; 02442-1c; 02447-1c-3c, 4c, 6c;
02440-2c-3c; 02347-1c; 02330-1A; 02347-1E; 02417-1c; 02440-1;
02314-2c & 02402-4A (QC only); 02428-1D (QC only).

STANDARDS	EM, %T, ABS.	ACTUAL CONC.	THEORET. CONC.	%RECOVERY	UPPER LIMIT	LOWER LIMIT
BLANK	-0.001	0.0	0.0	NA	—	—
#1	0.130	25.0	25.0	100.0%	105.0%	95.0%
#2	0.258	49.9	50.0	99.8%	↓	↓
#3	0.486	98.4	100.0	98.4%	↓	↓
#4						
#5						

CONTINUING CALIBRATION

ID	THEORETICAL	ACTUAL	% RECOVERY	UPPER LIMIT	LOWER LIMIT
ICV	75.0	73.8	98.4%	110.0%	90.0%
LCS	40.0	42.3	105.8%	120.0%	80.0%
CCV ₁	50.0	49.7	99.4%	110.0%	90.0%
CCV ₂		50.0	100.0%	↓	↓
CCV ₃		51.8	103.6%	↓	↓
CCV ₄		49.4	98.8%	↓	↓
CCV ₅	↓	49.2	98.4%	↓	↓
PB2/28	0	ND	NA	+6	-6
PB3/2				↓	↓
PB2/26	↓			↓	↓
PB2/28	↓			↓	↓

RECOVERY = $\frac{(\text{ACTUAL})}{(\text{THEORETICAL})} \times 100$

VIEWED BY:

Meagan Mariani

APPROVED BY:

Gina Schreiner

DATE:

3/4/92

DATE:

3/5/92

TEST:

AS

MATRIX:

soil

ANALYSIS DATE:

3/4/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
02314-2c	11.7	13.6	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPD
02314-2c	11.7	40.0	41.6	41.7	74.8	75.0%	0	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY:

Meagan Mariani

APPROVED BY:

Cynthia Schmeier

DATE:

3/4/92

DATE:

3/5/92

TEST:

AS

MATRIX:

Filter-TCLP

ANALYSIS DATE:

3/4/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
02428-1D	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPD
02428-1D	ND	40.0	41.3	42.8	103.2%	107.0%	4	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY:

Maria Marian

APPROVED BY:

C. Arthur Schmeier

DATE:

3/4/92

DATE:

3/5/92

TEST:

AS

MATRIX:

TCLP-soil

ANALYSIS DATE:

3/4/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
02389-1c	MS	MS	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPD
02389-1c	MS	40.0	41.1	42.3	102.8%	105.8%	3	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY:

Melissa Mariani

APPROVED BY:

Cynthia Schmechel

DATE:

3/4/92

DATE:

3/5/92

TEST:

AS

MATRIX:

Water

ANALYSIS DATE:

3/4/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
02402-4A	7.2	8.8	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPD
02402-4A	7.2	40.0	42.0	44.8	87.0%	94.0%	6	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY:

Melba Mariani

APPROVED BY:

Cynthia Schueler

DATE:

3/4/92

DATE:

3/5/92

0304B

SPL AA QC FORM

EST CODE: AS
METHOD: GFAADATE: 3/4/92
TIME: 10:47ANALYST: WFL
DETECTION LIMIT: 6
UNITS: ug/LSAMPLES IN SET: 21SAMPLES IN SET: 02389-1c-8c; 02442-1c; 02447-1c-3c, 4c, 6c;
02440-2c-3c; 02347-1c; 02330-1A; 02347-1E; 02417-1c; 02440-
02314-2c & 02402-4A (QC only); 02428-1D (QC only);

STANDARDS	EM, %T, ABS.	ACTUAL CONC.	THEORET. CONC.	%RECOVERY	UPPER LIMIT	LOWER LIMIT
BLANK	-0.001	0.0	0.0	NA	—	—
#1	0.130	25.0	25.0	100.0%	105.0%	95.0%
#2	0.258	49.9	50.0	99.8%	↓	↓
#3	0.486	98.4	100.0	98.4%	↓	↓
#4						
#5						

CONTINUING CALIBRATION

ID	THEORETICAL	ACTUAL	% RECOVERY	UPPER LIMIT	LOWER LIMIT
ICV	75.0	73.8	98.4%	110.0%	90.0%
LCS	40.0	42.3	105.8%	120.0%	80.0%
CCV ₁	50.0	49.7	99.4%	110.0%	90.0%
CCV ₂		50.0	100.0%		
CCV ₃		51.8	103.6%		
CCV ₄		49.4	98.8%		
CCV ₅	↓	49.2	98.4%	↓	↓
PB2/28	0	ND	NA	+6	-6
PB3/2	↓				
PB2/26	↓				
PB2/28	↓				

RECOVERY = $\frac{(\text{ACTUAL})}{(\text{THEORETICAL})} \times 100$ VIEWED BY: Marga MarianiAPPROVED BY: Anthony SchinnerDATE: 3/4/92DATE: 3/5/92

TEST: ASMATRIX: soilANALYSIS DATE: 3/4/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
02314-2c	11.7	13.6	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPD
02314-2c	11.7	40.0	41.6	41.7	74.8	75.0%	0	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Meagan MarianiDATE: 3/4/92APPROVED BY: Cynthia SchneierDATE: 3/5/92

TEST:

AS

MATRIX:

Filter-TCLP

ANALYSIS DATE:

3/4/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
02428-1D	NS	NS	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	% RPD
02428-1D	NS	40.0	41.3	42.8	103.2%	107.0%	4	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY:

Maria Mariani

APPROVED BY:

Cynthia Schreiner

DATE:

3/4/92

DATE:

3/5/92

TEST:

AS

MATRIX:

TCLP-soil

ANALYSIS DATE:

3/4/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
02389-1c	MS	MS	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPD
02389-1c	MS	42.0	41.1	42.3	102.8%	105.8%	3	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY:

Margo Marian

APPROVED BY:

Cynthia Schmeider

DATE:

3/4/92

DATE:

3/5/92

TEST: ASMATRIX: WaterANALYSIS DATE: 3/4/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
02402-4A	7.2	8.8	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPD
02402-4A	7.2	40.0	42.0	44.8	87.0%	94.0%	6	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Meaga MardamDATE: 3/4/92APPROVED BY: Cynthia SchulerDATE: 3/5/92

SPL ICP (METHOD 6010/200.7) STANDARD QC FORM

DATE: 3/4/92TIME: 1235 PMFILE: A0304ANALYST: PR# SAMPLES IN SET: 21UNITS: mg/LSAMPLE #'s IN SET: 2347 1c, 2330 1A, 2339 1c - 8c, 2442 1c
2447 1c - 4c, 6c, 2440 1d, 2c, 3c, 2428 1c, 2c

TEST CODE	IDL	BLANK		STANDARD	
		EM	CONC	EM	CONC
Ni	0.03	0.006	0.000	3.41	10.00
Bc	0.003	0.007		5.09	
Sb	0.1	0.003		0.864	
Cl	0.01	0.001		1.93	
Cr	0.02	0.004		3.35	
Cu	0.01	0.003		2.58	
Zn	0.009	0.027		4.61	
BA	0.006	0.00	↓	3.96	↓

REVIEWED BY: Meagan MarianiAPPROVED BY: Cynthia SchmechelDATE: 3/5/92DATE: 3/5/92

SPL ICP CALIBRATION VERIFICATION

ID	TEST CODE	TRUE CONC.	FOUND CONC.	% RECOVERY	QC LIMITS	
					UPPER	LOWER
ICV	Ni	5.00	4.82	96.4	110.2	90.2
	Pb		4.99	99.8		
	Sb		5.23	104.6		
	Cd	↓	4.88	97.6		
	Cr	5.52	5.41	98.0		
	Cu	10.0	10.0	100.0		
	Zn	5.00	4.93	98.6		
↓	BA	↓	5.18	103.6		
CCV1	Ni	5.00	4.79	95.8		
	Pb		4.92	98.4		
	Sb		5.23	104.6		
	Cd	↓	4.92	98.4		
	Cr	5.52	5.41	98.0		
	Cu	10.0	9.79	97.9		
	Zn	5.00	4.95	99.0		
↓	BA	5.00	5.06	101.2		
CCV2	BA	5.00	5.11	102.2		
↓	Cr	5.52	5.44	98.6		
CCV3	BA	5.00	5.11	102.2		
↓	Cr	5.52	5.43	98.4		
CCV4	BA	5.00	5.17	103.4		
↓	Cr	5.52	5.51	99.8	↓	↓

CALCULATION: % RECOVERY = $\frac{(\text{FOUND CONC.})}{(\text{TRUE CONC.})} \times 100$

REVIEWED BY: Meaga MariamAPPROVED BY: Cynthia SchreinerDATE: 3/5/92DATE: 3/5/92

FILE: A0304MATRIX: TCLP - SoilANALYSIS DATE: 3/4/92SPL ICP DUPLICATES DATA

SAMPLE ID	TEST CODE	#1	#2	RPD (%)	QC LIMITS	DILUTION
2347 /c	Ni	0.034	0.042	N/A	20	1
	Be	NP	NP		20	
	Sb				20	
	Cd	↓	↓		20	
	Cr	0.022	0.024		20	
	Cu	NP	NP	↓	20	
	Zn	0.135	0.143	6	20	
✓	Ba	1.39	1.41	2	20	✓
					20	
					20	

$$\text{RELATIVE PERCENT DIFFERENCE} = \text{RPD} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPL ICP MATRIX SPIKE DATA

SAMPLE ID	TEST CODE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	% RPI
2347 /c	Ni	0.034	0.500	0.471	0.461	87.4	85.7	2	75-125	20
	Be	NP	0.050	0.045	0.045	90.0	90.0	0	75-125	20
	Sb		0.50	0.446	0.448	89.2	89.6	0	75-125	20
	Cd	↓	0.050	0.043	0.042	86.0	84.0	2	75-125	20
	Cr	0.022	0.20	0.195	0.193	86.5	85.5	1	75-125	20
	Cu	NP	0.25	0.235	0.236	94.0	94.4	0	75-125	20
	Zn	0.134	0.50	0.567	0.570	86.4	87.0	1	75-125	20
✓	Ba	1.38	0.50	1.80	1.80	84.0	84.0	0	75-125	20
									75-125	20
									75-125	20

$$\% \text{ RECOVERY} = \frac{(\text{SPIKED SAMPLE RESULT} - \text{SAMPLE RESULT})}{(\text{SPIKE ADDED})} \times 100$$

REVIEWED BY: Meara MarianiAPPROVED BY: Arthur SchreinerDATE: 3/5/92DATE: 3/5/92

FILE: A0304MATRIX: TCLP - (Filtered)ANALYSIS DATE: 3/4/92SPL ICP DUPLICATES DATA

SAMPLE ID	TEST CODE	#1	#2	RPD (%)	QC LIMITS	DILUTION
2428 2c	BA	0.072 N/A	0.071	1	20	1
↓	CR	ND	ND	N/A	20	1
					20	
					20	
					20	
					20	
					20	
					20	
					20	
					20	

$$\text{RELATIVE PERCENT DIFFERENCE} = \text{RPD} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPL ICP MATRIX SPIKE DATA

SAMPLE ID	TEST CODE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	% RPD
2428 2c	BA	0.072	0.50	0.564	0.562	98.4	98.0	0	75-125	20
↓	CR	ND	0.20	0.190	0.192	95.0	96.0	1	75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20

$$\% \text{ RECOVERY} = \frac{(\text{SPIKED SAMPLE RESULT} - \text{SAMPLE RESULT})}{(\text{SPIKE ADDED})} \times 100$$

REVIEWED BY: Melissa MarianiAPPROVED BY: Arthur SchienerDATE: 3/5/92DATE: 3/5/92

SPL AA QC FORM

TEST CODE: CdDATE: 3/3/92ANALYST: JmMETHOD: FLAATIME: 11:28DETECTION LIMIT: 0.03# SAMPLES IN SET: 19UNITS: mg/LSAMPLE #'S IN SET: 02417-1C; 02448-1C; 02442-1C; 02389-1C-8C;
02447-1C-4C, 6C; 02440-1D, 2C, 3C (02411-1A GC only) (02428-2C GC only)

STANDARDS	EM, %T, ABS.	ACTUAL CONC.	THEORET. CONC.	%RECOVERY	UPPER LIMIT	LOWER LIMIT
BLANK	-0.003	0.000	0.000	—	—	—
#1	0.045	0.200	0.200	100.0	105%	95%
#2	0.113 0.113	0.500	0.500	100.0	↓	↓
#3	0.214	0.987	1.000	98.7	↓	↓
#4						
#5						

CONTINUING CALIBRATION

ID	THEORETICAL	ACTUAL	% RECOVERY	UPPER LIMIT	LOWER LIMIT
ICV	0.800	0.817	102.1	110%	90%
LCS	1.000	0.935	93.5	120%	80%
CCV ₁	0.500	0.522	104.4	110%	90%
CCV ₂	↓	0.499	99.8	↓	↓
CCV ₃	↓	0.500	100.0	↓	↓
CCV ₄	↓	0.500	100.0	↓	↓
PB 2/28	0	ND	NA	0.03	-0.03
PB 3/2	↓	↓	↓	↓	↓
PB 3/2 EXT	↓	↓	↓	↓	↓
PB 2/27	↓	↓	↓	↓	↓

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL})}{(\text{THEORETICAL})} \times 100$$
REVIEWED BY: Meara MarionAPPROVED BY: C. J. SullivanDATE: 3/3/92DATE: 3/3/92

SPL AA QC FORM

TEST CODE: CdDATE: 3/3/92ANALYST: JmMETHOD: FLAATIME: 11:28DETECTION LIMIT: 0.03

SAMPLES IN SET: _____

UNITS: mg/L

SAMPLE #'S IN SET: _____

STANDARDS	EM, %T, ABS.	ACTUAL CONC.	THEORET. CONC.	%RECOVERY	UPPER LIMIT	LOWER LIMIT
BLANK						
#1						
#2						
#3						
#4						
#5						

CONTINUING CALIBRATION

Cont'd

ID	THEORETICAL	ACTUAL	% RECOVERY	UPPER LIMIT	LOWER LIMIT
lev CON ₅	0.500	0.517	103.4	110%	90%
res CON ₆	↓	0.520	104.0	↓	↓

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL})}{(\text{THEORETICAL})} \times 100$$
REVIEWED BY: Mearza MariamAPPROVED BY: William SchuenerDATE: 3/3/92DATE: 3/3/92

TEST: CdMATRIX: TCLP-soilANA: IS DATE: 3/3/92

SPL AA DUPLICATE AND SPIKE DAT

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
02389-1C	ND	ND	NA	20	1
02442-1C	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPD
02389-1C	ND	0.050	0.049	0.048	98.0	96.0	2	75 - 125	20
02442-1C	ND	↓	0.049	0.048	98.0	96.0	2	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Meara MarlamAPPROVED BY: Arthur SchreinerDATE: 3/3/92DATE: 3/3/92

TEST: CdMATRIX: waterANALYSIS DATE: 3/3/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
02411-1A	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPD
02411-1A	ND	0.050	0.051	0.051	102.0	102.0	0	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Meagan MarstonAPPROVED BY: Arthur SchermerDATE: 3/3/92DATE: 3/3/92

TEST: CdMATRIX: TCLP-liquidANALYSIS DATE: 3/3/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
02428-2c	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPD
02428-2c	ND	0.050	0.056	0.055	112.0	110.0	2	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Meaga MarianiAPPROVED BY: Arthur SchumiDATE: 3/3/92DATE: 3/3/92

SPL AA QC FORM

TEST CODE: HgDATE: 3/4/92ANALYST: gmMETHOD: CVAATIME: 9.16DETECTION LIMIT: 0.6# SAMPLES IN SET: 20UNITS: ug/LSAMPLE #'S IN SET: 02442-1C; 02389-1C-8C; 02447-1C-4C, 6C;
02440-1D, 2C, 3C; 02417-1C; 02448-1C; 02423-1B

STANDARDS	EM, %T, ABS.	ACTUAL CONC.	THEORET. CONC.	%RECOVERY	UPPER LIMIT	LOWER LIMIT
BLANK	0.007	0.00	0.00	—	—	—
#1	0.015	0.50	0.50	100.0	105%	95%
#2	0.028	0.98	1.00	98.0	↓	↓
#3	0.140	5.00	5.00	100.0	↓	↓
#4	0.277	9.98	10.00	99.8	↓	↓
#5						

CONTINUING CALIBRATION

ID	THEORETICAL	ACTUAL	% RECOVERY	UPPER LIMIT	LOWER LIMIT
ICV	2.50	2.51	100.4	120%	80%
LCS	2.00	2.06	103.0	↓	↓
CCV ₁	2.50	2.59	103.6	↓	↓
CCV ₂	↓	2.54	101.6	↓	↓
CCV ₃	↓	2.66	106.4	↓	↓
CCV ₄	↓	2.62	104.8	↓	↓
CCV ₅	↓	2.06	82.4	↓	↓
PB water	0	ND	NA	0.6	-0.6
PB 2/27	↓	↓	↓	↓	↓
PB 2/29	↓	↓	↓	↓	↓
PB 2/29 821	↓	↓	↓	↓	↓

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL})}{(\text{THEORETICAL})} \times 100$$

REVIEWED BY: Meagan MarianiAPPROVED BY: Cynthia SchreinerDATE: 3/4/92DATE: 3/4/92

TEST: HgMATRIX: TOP-soilANALYSIS DATE: 3/3/92
9m

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
02442-1C	ND	ND	NA	20	4
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPD
02442-1C	ND	2.00	2.13	2.18	106.5	109.0	2	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Meaga MarianiDATE: 3/4/92APPROVED BY: Cynthia SchreinerDATE: 3/4/92

TEST: HgMATRIX: 100% liquidANALYSIS DATE: 3/4/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
02440-1D	ND	ND	NA	20	4
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPD
02440-1D	NA	2.00	2.25	2.17	112.5	108.5	4	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Meagan MatiamDATE: 3/4/92APPROVED BY: Cynthia SchreinerDATE: 3/4/92

TEST:

Hg

MATRIX:

water

ANALYSIS DATE:

3/4/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
02448-1C	ND	ND	NA	20	2
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPD
02448-1C	ND	2.00	2.14	2.13	107.0	106.5	D	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Meagan Mariani

APPROVED BY:

Cynthia Schreiner

DATE:

3/4/92

DATE:

3/4/92

SPL AA QC FORM

TEST CODE: PbDATE: 3/3/92ANALYST: gmMETHOD: FLAATIME: 15:29DETECTION LIMIT: 0.3# SAMPLES IN SET: 28UNITS: mg/LSAMPLE #'S IN SET: 02442-1C; 02389-1C-8C; 02447-1C-4C, 6C; 02440-1C, 2C; 02428-1C, 2C; 02417-1C; 02448-1C; 02417-7C, 8C; 02484-1A-4A, 5B (02411-1A-C only)

STANDARDS	EM, %T, ABS.	ACTUAL CONC.	THEORET. CONC.	%RECOVERY	UPPER LIMIT	LOWER LIMIT
BLANK	-0.001	0.00	0.00	—	—	—
#1	0.010	0.50	0.50	100.0	105%	95%
#2	0.019	0.99	1.00	99.0	↓	↓
#3	0.037	1.98	2.00	99.0	↓	↓
#4						
#5						

CONTINUING CALIBRATION

ID	THEORETICAL	ACTUAL	% RECOVERY	UPPER LIMIT	LOWER LIMIT
ICV	1.00	1.00	100.0	110%	90%
LCS		0.99	99.0	120%	80%
CCV ₁		0.98	98.0	110%	90%
CCV ₂		0.99	99.0		
CCV ₃		0.99	99.0		
CCV ₄		0.93	93.0		
CCV ₅		0.91	91.0		
CCV ₆	↓	0.91	91.0	↓	↓
	Cont'd on next page			gm.	

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL})}{(\text{THEORETICAL})} \times 100$$
REVIEWED BY: Melissa MarionAPPROVED BY: Cynthia SchulerDATE: 3/4/92DATE: 3/4/92

SPL AA QC FORM

TEST CODE: PbDATE: 3/3/92ANALYST: JmMETHOD: FLAATIME: 15:29DETECTION LIMIT: 0.3

SAMPLES IN SET: _____

UNITS: mg/L

SAMPLE #'S IN SET: _____

STANDARDS	EM, %T, ABS.	ACTUAL CONC.	THEORET. CONC.	%RECOVERY	UPPER LIMIT	LOWER LIMIT
BLANK						
#1						
#2						
#3						
#4						
#5						

CONTINUING CALIBRATION

Cont'd

ID	THEORETICAL	ACTUAL	% RECOVERY	UPPER LIMIT	LOWER LIMIT
rev PB 3/2	0	ND	NA	0.3	-0.3
Jm Les PB 3/2	↓	↓	↓	↓	↓
PB 3/2	↓	↓	↓	↓	↓
PB 3/2	↓	↓	↓	↓	↓
PB 3/2	↓	↓	↓	↓	↓
PB 3/2	↓	↓	↓	↓	↓

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL})}{(\text{THEORETICAL})} \times 100$$

REVIEWED BY: Meagan MarianiDATE: 3/4/92APPROVED BY: Cynthia SchmittDATE: 3/4/92

TEST: PbMATRIX: TCUP- 401PANALYSIS DATE: 3/3/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
02389-1C	ND	ND	NA	20	1
02412-1C	↓	↓	↓	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPD
02389-1C	ND	0.50	0.45	0.45	90.0	90.0	0	75 - 125	20
02412-1C	↓	↓	0.46	0.48	92.0	96.0	4	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Maria MarianaAPPROVED BY: Cynthia SchreinerDATE: 3/4/92DATE: 3/4/92

TEST: PbMATRIX: Tea-liquidANALYSIS DATE: 3/3/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
02428-2C	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPD
02428-2C	ND	0.50	^{0.40} 0.59 gm	0.47	80.0	94.0	16	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Meaza MariamAPPROVED BY: Cynthia SchreinerDATE: 3/4/92DATE: 3/4/92

TEST: PbMATRIX: waterANALYSIS DATE: 3/3/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
02411-1A	0.11	0.14	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPD
02411-1A	0.11	0.50	0.54	0.56	86.0	90.0	4	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Meagan MarianiAPPROVED BY: Cynthia SchreinerDATE: 3/4/92DATE: 3/4/92

0304C

SPL AA QC FORM

EST CODE: SRDATE: 3/4/92ANALYST: WFLMETHOD: GFAATIME: 15:31DETECTION LIMIT: 6SAMPLES IN SET: 19UNITS: ug/L

SAMPLE #'S IN SET: 02389-1c-8c; 02442-1c; 02447-1c-3c, 4c, 6c; 02440-2c-3c; 02428-1D (QC only); 02347-1c; 02330-1A; 02440-1D.

STANDARDS	EM, %T, ABS.	ACTUAL CONC.	THEORET. CONC.	%RECOVERY	UPPER LIMIT	LOWER LIMIT
BLANK	0.002	0.0	0.0	NA	—	—
#1	0.080	25.0	25.0	100.0%	105.0%	95.0%
#2	0.152	49.7	50.0	99.4%	↓	↓
#3	0.280	97.9	100.0	97.9%	↓	↓
#4						
#5						

CONTINUING CALIBRATION

ID	THEORETICAL	ACTUAL	% RECOVERY	UPPER LIMIT	LOWER LIMIT
ICV	75.0	78.7	104.9%	110.0%	90.0%
LCS	30.0	31.2	104.0%	120.0%	80.0%
CCV ₁	50.0	47.6	95.2%	110.0%	90.0%
CCV ₂		50.0	100.0%	↓	↓
CCV ₃		52.2	104.4%	↓	↓
CCV ₄	↓	48.7	97.4%	↓	↓
PB ^{2/28}	0	ND	NA	+6	-6
PB ^{3/2}	0	ND	NA	+6	-6

% RECOVERY = $\frac{(\text{ACTUAL})}{(\text{THEORETICAL})} \times 100$

REVIEWED BY: Mega MarionAPPROVED BY: Cy Arthur SchreinerTE: 3/5/92DATE: 3/6/92

TEST: SeMATRIX: TCLP-soilANALYSIS DATE: 3/4/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
02389-1c	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	% RPI
02389-1c	ND	30.0	26.3	4.4	87.7%	81.3%	7	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Melissa MarianiDATE: 3/5/92APPROVED BY: Cynthia SchumanDATE: 3/6/92

TEST:

Se

MATRIX:

TCLP Filtered

ANALYSIS DATE:

3/4/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
02428-18	NS	NS	N/A	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	% RPI
02428-18	NS	30.0	33.8	34.2	112.7%	114.9%	1	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY:

Marya Mariani

APPROVED BY:

Cynthia Stuenkel

DATE:

3/5/92

DATE:

3/6/92

0-204C

SPL AA QC FORM

EST CODE: SRDATE: 3/4/92ANALYST: WFLMETHOD: GFAATIME: 15:31DETECTION LIMIT: 6SAMPLES IN SET: 19UNITS: ug/L

SAMPLE #'S IN SET: 02389-1c-8c; 02442-1c; 02447-1c-3c, 4c;
02440-2c-3c; 02428-1c (Ac only); 02347-1c; 02330-1A;
02440-1D.

STANDARDS	EM, %T, ABS.	ACTUAL CONC.	THEORET. CONC.	%RECOVERY	UPPER LIMIT	LOWER LIMIT
BLANK	0.002	0.0	0.0	NA	—	—
#1	0.080	25.0	25.0	100.0%	105.0%	95.0%
#2	0.152	49.7	50.0	99.4%	↓	↓
#3	0.280	97.9	100.0	97.9%	↓	↓
#4						
#5						

CONTINUING CALIBRATION

ID	THEORETICAL	ACTUAL	% RECOVERY	UPPER LIMIT	LOWER LIMIT
ICV	75.0	78.7	104.9%	110.0%	90.0%
LCS	30.0	31.2	104.0%	120.0%	80.0%
CCV	50.0	47.6	95.2%	110.0%	90.0%
ECV _{1/2}	↓	50.0	100.0%	↓	↓
CCV ₃	↓	52.2	104.4%	↓	↓
ECV ₄	↓	48.7	97.4%	↓	↓
PB _{2/28}	0	ND	NA	+6	-6
PB _{3/2}	0	ND	NA	+6	-6

% RECOVERY = $\frac{(\text{ACTUAL})}{(\text{THEORETICAL})} \times 100$

REVIEWED BY: Margo MarianiAPPROVED BY: Cy Arthur SilvermanDATE: 3/5/92DATE: 3/6/92

TEST:

Se

MATRIX:

TCLP-soil

ANALYSIS DATE:

3/4/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
02389-1c	NS	NS	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	% RPI
02389-1c	NS	30.0	26.3	4.4	87.7%	81.3%	7	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY:

Melissa Mariani

APPROVED BY:

Cynthia Schuener

DATE:

3/5/92

DATE:

3/6/92

TEST:

Se

MATRIX:

TCLP Filtered

ANALYSIS DATE:

3/4/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
02428-18	NS	NS	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RP
02428-18	NS	30.0	33.8	34.2	112.7%	114.9%	1	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY:

Meagan Mariani

APPROVED BY:

Cynthia Schneider

DATE:

3/5/92

DATE:

3/6/92



**** SPL QUALITY CONTROL REPORT ****
TOTAL PETROLEUM HYDROCARBONS (TPH)

SPL sample Id: F202452-01B
Matrix: SOIL

Reported on: 03/16/92
Analyzed on: 02/28/92

This sample was randomly selected for use in the SPL quality control program. One in ten samples is fortified with a known concentration of the substance being analyzed and one in ten samples is analyzed in duplicate. The result are as follows:

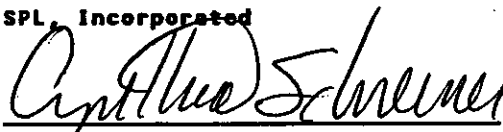
-- SPIKE ANALYSIS --

Sample Id	Blank Value	Spike Added mg/L	Original Sample Concentration mg/Kg	MS Concentration mg/Kg	MS % Rec
F202452-01B	ND	361	19	368	97

-- SPIKE DUPLICATE ANALYSIS --

Sample Id	Spike Added mg/L	MSD Concentration mg/Kg	MSD % Rec	% RPD
F202452-01B	361	365	96	1

SPL, Incorporated


Cynthia Schreiner, QC Officer



**** SPL QUALITY CONTROL REPORT ****
TOTAL PETROLEUM HYDROCARBONS (TPH)

SPL sample Id: BLANK
Matrix: WATER

Reported on: 03/16/92
Analyzed on: 03/03/92

This sample was randomly selected for use in the SPL quality control program. One in ten samples is fortified with a known concentration of the substance being analyzed and one in ten samples is analyzed in duplicate. The result are as follows:

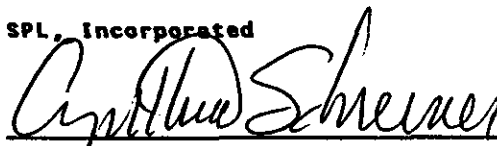
-- SPIKE ANALYSIS --

Sample Id	Blank Value	Spike Added mg/L	Original Sample Concentration mg/L	MS Concentration mg/L	MS % Rec
BLANK	ND	361	ND	358	99

-- SPIKE DUPLICATE ANALYSIS --

Sample Id	Spike Added mg/L	MSD Concentration mg/L	MSD % Rec	% RPD
BLANK	361	338	94	6

SPL, Incorporated


Cynthia Schreiner, QC Officer



8880 Interchange Drive, Houston, Texas 77054 713/660-0901

Wet Chemistry QA/QC Validation Report

Test Code PH
Method 150.1
Of Samples in Set 10

Date 2-28-92
Time 10:30a

Analyst KEW
Matrix LIQUID

Detection Limit 1

Sample #'s in Set	<u>2024610-1F</u>	<u>202474-1C</u>				Units <u>mg/L</u> <u>ph units</u>
	<u>202440-1B</u>	<u>202471-1C</u>				<u>C.S.</u>
	<u>202448-1D</u>	<u>202472-1C</u>				

Standards	EM, %T, ABS.	Actual Concentration	Theoretical Concentration	% Recovery	Upper Limit	Lower Limit
Blank	<u>BUFFERS</u>					
#1	<u>4.00</u>	<u>4.00</u>	<u>4.00</u>	<u>100.0</u>	<u>4.29</u>	<u>3.87</u>
#2	<u>7.00</u>	<u>6.99</u>	<u>7.00</u>	<u>99.9</u>	<u>7.07</u>	<u>6.95</u>
#3	<u>10.00</u>	<u>10.00</u>	<u>10.00</u>	<u>100.1</u>	<u>10.12</u>	<u>9.94</u>
#4	<u>CALIBRATED w/ 4.00 & 10.00 BUFFERS</u>					
Check Std.	<u>TEMP: 21°C</u> <u>SLOPE: 100.5</u>					

Duplicate	#1	#2	RPD (%)	Upper Limit	Lower Limit	Dilution
<u>202448-1D</u>	<u>7.79</u>	<u>7.79</u>	<u>0</u>	<u>1.20</u>	<u>0.90</u>	

Spike Sample	Concentration Before Spike	Amount Added	Concentration After Spike	After - Before	% Recovery	Upper Limit	Lower Limit
<u>NA</u>							

Spike Recovery Calculation
% Recovery = $\frac{(\text{Actual} - \text{Original})}{\text{Amount Added}} \times 100$

Relative Percent Difference Calculation
RPD = $\frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$

Reviewed By [Signature]
2/29/92

Approved By [Signature]
2/1/92

Toxcon Engineering Company, Inc.
3334 Richmond Ave., #200
Houston, Texas 77098
(713) 520-7667

Analysis Request and Chain of Custody Record

Project No.	Client/Project Name	Project Location						
504867-00	Baker Oil Tools / Hobbs, N.M.	2800 W. Marland Hobbs, N.M.						
Field Sample No./ Identification	Date and Time	g/g	g/g	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS
WW22492	2/24/92 12:10	✓		1 L glass	water	HCl ice	TPH (418.1)	
		✓		Boroglass		ice	pH	
		✓		3 VOA's		HCl ice	Volatiles (8240)	
		✓		1 L glass		ice	TCLP metals (6010/7000/1311)	
BB:26-27.5	2/25/92 11:10	✓		16 oz WMG	soil	ice	TPH (418.1) Volatiles (8240)	
BB:31.5-33.5	2/25/92 11:40	✓				↓	↓	
Sampers: (Signature)	Rajeev Poddar							
Affiliation	Simon Hydro-Search							
SAMPLER REMARKS:	* send results to Torcon address above							
Seal #								

175-200

40

SPL HOUSTON ENVIRONMENTAL LABORATORY

SAMPLE LOGIN CHECKLIST

DATE: 2/22 TIME: 9:00 CLIENT NO. _____
 LOT NO. _____ CONTRACT NO. _____

CLIENT SAMPLE NOS. _____

SPL SAMPLE NOS.: _____

- | | <u>YES</u> | <u>NO</u> |
|---|-------------------------------------|--|
| 1. Is a Chain-of-Custody form present? | ☒ | ☐ |
| 2. Is the COC properly completed? | ☒ | ☐ |
| If no, describe what is incomplete:

_____ | | |
| If no, has the client been contacted about it?
(Attach subsequent documentation from client about the situation) | | |
| 3. Is airbill/packing list/bill of lading with shipment? | ☒ | ☐ |
| If yes, ID#: <u>Fey ex</u> | | |
| 4. Is a USEPA Traffic Report present? | ☐ | ☒ |
| 5. Is a USEPA SAS Packing List present? | ☐ | ☒ |
| 6. Are custody seals present on the package? | ☐ | ☒ |
| If yes, were they intact upon receipt? | | |
| 7. Are all samples tagged or labeled? | ☒ | ☐ |
| Do the sample tags/labels match the COC? | | |
| If no, has the client been contacted about it? | | |
| (Attach subsequent documentation from client about the situation) | | |
| 8. Do all shipping documents agree? | ☐ | ☐ |
| If no, describe what is in nonconformity:

_____ | | |
| 9. Condition/temperature of shipping container: | ☒ | ☐ |
| 10. Condition/temperature of sample bottles: | ☒ | ☐ |
| 11. Sample Disposal?: | ☒ | ☐ |
| | | SPL disposal <u>Intact - 5°C</u>
Return to client <u>Good - 5°C</u> |

NOTES (reference item number if applicable): _____

ATTEST: [Signature] DATE: 2/22
 DELIVERED FOR RESOLUTION: REC'D _____ DATE: _____
 RESOLVED: _____ DATE: _____

February 1992 Investigation
(Various Analytical Results)



SPL, INC.

REPORT APPROVAL SHEET

WORK ORDER NUMBER: F 2-02-493

Approved for release by:

M. Scott Kunde Date: 3/18/92

S. Sample, Project Management Supervisor

Cynthia Schreiner Date: 3/18/92

C. Schreiner, Quality Assurance Manager



CASE NARRATIVE

QUALITY CONTROL RESULTS SUMMARY

WORK ORDER NO.: F2-02-493

SAMPLE NO: 03C

Due to matrix interference, the matrix spike recovery for Silver is below the minimum QC limits.

SOUTHERN PETROLEUM LABORATORIES

Meaza Mariam

Meaza Mariam
Metals Supervisor



CLIENT NAME: Simon Hydro-Search
CLIENT ID: B9: 34.5-36

SPL #: F202493-01

TCLP SUMMARY

PARAMETER	UNCORRECTED RESULTS (mg/L)	CORRECTED RESULTS * (mg/L)	REGULATORY LIMIT (mg/L)
ARSENIC	< 0.007	< 0.007	5.0
BARIUM	0.510	0.529	100.0
CADMIUM	< 0.03	< 0.03	1.0
CHROMIUM	< 0.02	< 0.02	5.0
LEAD	< 0.3	< 0.3	5.0
MERCURY	< 0.002	< 0.002	0.2
SELENIUM	< 0.007	< 0.007	1.0
SILVER	< 0.02	< 0.02	5.0

* = Reference Federal Register 55, 26986 (6/29/90), RCRA Toxicity Characteristic Final Rule.

** = These two compounds are quantitated together.

Compounds reflect terminology and regulatory limits as presented in Federal Register, (3/29/90 & 6/29/90).



CLIENT NAME: Simon Hydro-Search
CLIENT ID: MW1: 33.5-35

SPL #: F202493-02

TCLP SUMMARY

PARAMETER	UNCORRECTED RESULTS (mg/L)	CORRECTED RESULTS * (mg/L)	REGULATOR LIMIT (mg/L)
ARSENIC	< 0.007	< 0.007	5.0
BARIUM	0.829	0.860	100.0
CADMIUM	< 0.03	< 0.03	1.0
CHROMIUM	< 0.02	< 0.02	5.0
LEAD	< 0.3	< 0.3	5.0
MERCURY	< 0.002	< 0.002	0.2
SELENIUM	< 0.007	< 0.007	1.0
SILVER	< 0.02	< 0.02	5.0

* = Reference Federal Register 55, 26986 (6/29/90), RCRA Toxicity Characteristic Final Rule.

** = These two compounds are quantitated together.

Compounds reflect terminology and regulatory limits as presented in Federal Register, (3/29/90 & 6/29/90).



CLIENT NAME: Simon Hydro-Search
CLIENT ID: MW1: 33.5-35

SPL #: F202493-03

TCLP SUMMARY

PARAMETER	UNCORRECTED RESULTS (mg/L)	CORRECTED RESULTS * (mg/L)	REGULATOR LIMIT (mg/L)
ARSENIC	< 0.007	< 0.007	5.0
BARIUM	0.404	0.404	100.0
CADMIUM	< 0.03	< 0.03	1.0
CHROMIUM	< 0.02	< 0.02	5.0
LEAD	< 0.3	< 0.3	5.0
MERCURY	< 0.002	< 0.002	0.2
SELENIUM	< 0.007	< 0.007	1.0
SILVER	< 0.02	< 0.02	5.0

* = Reference Federal Register 55, 26986 (6/29/90), RCRA Toxicity Characteristic Final Rule.

** = These two compounds are quantitated together.

Compounds reflect terminology and regulatory limits as presented in Federal Register, (3/29/90 & 6/29/90).



CLIENT NAME: Simon Hydro-Search
CLIENT ID: MW2: 022892

SPL #: F202493-04

TCLP SUMMARY

PARAMETER	UNCORRECTED RESULTS (mg/L)	CORRECTED RESULTS * (mg/L)	REGULATORY LIMIT (mg/L)
ARSENIC	< 0.007	< 0.007	5.0
BARIUM	0.587	0.587	100.0
CADMIUM	< 0.03	< 0.03	1.0
CHROMIUM	< 0.02	< 0.02	5.0
LEAD	< 0.3	< 0.3	5.0
MERCURY	< 0.002	< 0.002	0.2
SELENIUM	< 0.007	< 0.007	1.0
SILVER	< 0.02	< 0.02	5.0

* = Reference Federal Register 55, 26986 (6/29/90), RCRA Toxicity Characteristic Final Rule.

** = These two compounds are quantitated together.

Compounds reflect terminology and regulatory limits as presented in Federal Register, (3/29/90 & 6/29/90).



CLIENT NAME: Simon Hydro-Search
CLIENT ID: MW2: 31.5-33

SPL #: F202493-05

TCLP SUMMARY

PARAMETER	UNCORRECTED RESULTS (mg/L)	CORRECTED RESULTS * (mg/L)	REGULATORY LIMIT (mg/L)
ARSENIC	< 0.007	< 0.007	5.0
BARIUM	0.938	0.973	100.0
CADMIUM	< 0.03	< 0.03	1.0
CHROMIUM	< 0.02	< 0.02	5.0
LEAD	< 0.3	< 0.3	5.0
MERCURY	< 0.002	< 0.002	0.2
SELENIUM	< 0.007	< 0.007	1.0
SILVER	< 0.02	< 0.02	5.0

* = Reference Federal Register 55, 26986 (6/29/90), RCRA Toxicity Characteristic Final Rule.

** = These two compounds are quantitated together.

Compounds reflect terminology and regulatory limits as presented in Federal Register, (3/29/90 & 6/29/90).



CLIENT NAME: Simon Hydro-Search
CLIENT ID: MW3: 31-33

SPL #: F202493-06

TCLP SUMMARY

PARAMETER	UNCORRECTED RESULTS (mg/L)	CORRECTED RESULTS * (mg/L)	REGULATORY LIMIT (mg/L)
ARSENIC	< 0.007	< 0.007	5.0
BARIUM	1.46	1.51	100.0
CADMIUM	< 0.03	< 0.03	1.0
CHROMIUM	< 0.02	< 0.02	5.0
LEAD	< 0.3	< 0.3	5.0
MERCURY	< 0.002	< 0.002	0.2
SELENIUM	< 0.007	< 0.007	1.0
SILVER	< 0.02	< 0.02	5.0

* = Reference Federal Register 55, 26986 (6/29/90), RCRA Toxicity Characteristic Final Rule.

** = These two compounds are quantitated together.

Compounds reflect terminology and regulatory limits as presented in Federal Register, (3/29/90 & 6/29/90).



CLIENT NAME: Simon Hydro-Search
CLIENT ID: MW3: 022892

SPL #: F202493-07

TCLP SUMMARY

PARAMETER	UNCORRECTED RESULTS (mg/L)	CORRECTED RESULTS * (mg/L)	REGULATO LIMIT (mg/L)
ARSENIC	< 0.007	< 0.007	5.0
BARIUM	0.544	0.544	100.0
CADMIUM	< 0.03	< 0.03	1.0
CHROMIUM	< 0.02	< 0.02	5.0
LEAD	< 0.3	< 0.3	5.0
MERCURY	< 0.002	< 0.002	0.2
SELENIUM	< 0.007	< 0.007	1.0
SILVER	< 0.02	< 0.02	5.0

* = Reference Federal Register 55, 26986 (6/29/90), RCRA Toxicity Characteristic Final Rule.

** = These two compounds are quantitated together.

Compounds reflect terminology and regulatory limits as presented in Federal Register, (3/29/90 & 6/29/90).



Certificate of Analysis No. F202493-01

Simon Hydro-Search
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

03/18/92

Project: Project No. 504867.00
Site: Baker Oil Tools
2800 W. Marland
Hobbs, NM
Sample No: B9: 34.5-36
Sample of: Soil
Sampled by: Simon Hydro-Search
Sample Date: 02/26/92 14:50:00

A N A L Y T I C A L R E S U L T S

ANALYSIS/METHOD -----	RESULTS -----	DETECTION LIMIT -----
TOTAL PETROLEUM HYDROCARBONS Method-418.1	61 mg/Kg	10 mg
TPH ANALYZED BY: DC	DATE/TIME: 03/02/92	

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.
QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Incorporated

Shari L. Grice
Shari L. Grice

**ANALYTICAL RESULTS****Volatile Organics by USEPA Method 8240**

Client ID: B9: 34.5-36
SPL ID: F20249301B
Analyst: JC

Matrix: SOIL
Dilution: 1
% Moisture: 22
Level: LOW

Received:
Extracted:
Analyzed:

Compound	Concentration, ug/Kg	
	Amount	M D L
Acetone	37	13
Benzene	ND	6
Bromodichloromethane	ND	6
Bromoform	ND	6
Bromomethane	ND	13
2-Butanone	ND	26
Carbon Disulfide	ND	6
Carbon Tetrachloride	ND	6
Chlorobenzene	ND	6
Chloroethane	ND	13
2-Chloroethylvinylether	ND	13
Chloroform	ND	6
Chloromethane	ND	13
Dibromochloromethane	ND	6
1,1-Dichloroethane	ND	6
1,2-Dichloroethane	ND	6
1,1-Dichloroethene	ND	6
Trans-1,2-Dichloroethane	ND	6
1,2-Dichloropropane	ND	6
Cis-1,3-Dichloropropene	ND	6
Trans-1,3-Dichloropropene	ND	6
Ethylbenzene	19	6
2-Hexanone	ND	13
4-Methyl-2-Pentanone	26	13
Methylene Chloride	9	6
Styrene	ND	6
1,1,2,2-Tetrachloroethane	ND	6
Tetrachloroethene	ND	6
Toluene	16	6
1,1,1-Trichloroethane	ND	6
1,1,2-Trichloroethane	ND	6
Trichloroethene	ND	6
Trichlorofluoromethane	ND	6
Vinyl Acetate	ND	13
Vinyl Chloride	ND	13
Total Xylenes	72	6

SURROGATES

1,2-Dichloroethane-D4	80% Recovery
Toluene-D8	94% Recovery
4-Bromofluorobenzene	87% Recovery

ND - Not Detected.

MDL - Method detection limit.

* - Surrogates out of range



Simon Hydro-Search
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F202493-01C
Invoice #: 406525
Report Date: 03/18/92

Project No. 504867.00
B9: 34.5-36

Date Received: 02/29/92
Date Collected: 02/26/92 14:50:00

Test Name Method	Result Units	Detection Limit	Date Started	Analy
Silver, TCLP Leachate METHOD 7760	ND mg/L	0.02	03/13/92	JM
Arsenic, TCLP Leachate METHOD 7060	ND mg/L	0.007	03/12/92	WFI
Barium, TCLP Leachate METHOD 6010	0.510 mg/L	0.007	03/11/92	DQ
Cadmium, TCLP Leachate METHOD 7130	ND mg/L	0.03	03/13/92	JM
Chromium, TCLP Leachate METHOD 6010	ND mg/L	0.02	03/11/92	DQ
Mercury, TCLP Leachate METHOD 7470	ND mg/L	0.002	03/10/92	JM
Acid Digestion - Microwave EPA CLP SOW	Complete		03/10/92	CC
Lead, TCLP Leachate METHOD 7420	ND mg/L	0.3	03/13/92	JM
TCLP Leachate extraction METHOD 1311	Complete		03/07/92	ET
Selenium, TCLP Leachate METHOD 7740	ND mg/L	0.007	03/12/92	WFI

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.

SPL ENVIRONMENTAL LABORATORIES, INC.



Certificate of Analysis No. F202493-02

Simon Hydro-Search
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

03/18/92

Project: Project No. 504867.00
Site: Baker Oil Tools
2800 W. Marland
Hobbs, NM
Sample No: MW1: 33.5-35
Sample of: Soil
Sampled by: Simon Hydro-Search
Sample Date: 02/27/92 07:20:00

A N A L Y T I C A L R E S U L T S

ANALYSIS/METHOD	RESULTS	DETECTION LIM
TOTAL PETROLEUM HYDROCARBONS Method-418.1	ND mg/Kg	10 mg

TPH ANALYZED BY: DC

DATE/TIME: 03/02/92

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.
QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Incorporated

Shari L. Grice
Shari L. Grice



ANALYTICAL RESULTS

Volatile Organics by USEPA Method 8240

Client ID: MW1: 33.5-35

SPL ID: F20249302B

Analyst: JC

Matrix: SOIL

Dilution: 1

% Moisture: 16

Level: LOW

Received:

Extracted:

Analyzed:

C o m p o u n d	Concentration, ug/Kg	
	Amount	M D L
Acetone	15	12
Benzene	ND	6
Bromodichloromethane	ND	6
Bromoform	ND	6
Bromomethane	ND	12
2-Butanone	ND	24
Carbon Disulfide	ND	6
Carbon Tetrachloride	ND	6
Chlorobenzene	ND	6
Chloroethane	ND	12
2-Chloroethylvinylether	ND	12
Chloroform	ND	6
Chloromethane	ND	12
Dibromochloromethane	ND	6
1,1-Dichloroethane	ND	6
1,2-Dichloroethane	ND	6
1,1-Dichloroethene	ND	6
Trans-1,2-Dichloroethene	ND	6
1,2-Dichloropropane	ND	6
Cis-1,3-Dichloropropene	ND	6
Trans-1,3-Dichloropropene	ND	6
Ethylbenzene	ND	6
2-Hexanone	ND	12
4-Methyl-2-Pentanone	ND	12
Methylene Chloride	10	6
Styrene	ND	6
1,1,2,2-Tetrachloroethane	ND	6
Tetrachloroethene	ND	6
Toluene	ND	6
1,1,1-Trichloroethane	ND	6
1,1,2-Trichloroethane	ND	6
Trichloroethene	ND	6
Trichlorofluoromethane	ND	6
Vinyl Acetate	ND	12
Vinyl Chloride	ND	12
Total Xylenes	ND	6

SURROGATES

1,2-Dichloroethane-D4	93%	Recovery
Toluene-D8	96%	Recovery
4-Bromofluorobenzene	95%	Recovery

ND - Not Detected.

MDL - Method detection limit.

* - Surrogates out of range



Simon Hydro-Search
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F202493-02C
Invoice #: 406525
Report Date: 03/18/92

Project No. 504867.00
MW1: 33.5-35

Date Received: 02/29/92
Date Collected: 02/27/92 07:20:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Silver, TCLP Leachate METHOD 7760	ND mg/L	0.02	03/13/92	JM
Arsenic, TCLP Leachate METHOD 7060	ND mg/L	0.007	03/12/92	WFL
Barium, TCLP Leachate METHOD 6010	0.829 mg/L	0.007	03/11/92	DQ
Cadmium, TCLP Leachate METHOD 7130	ND mg/L	0.03	03/13/92	JM
Chromium, TCLP Leachate METHOD 6010	ND mg/L	0.02	03/11/92	DQ
Mercury, TCLP Leachate METHOD 7470	ND mg/L	0.002	03/10/92	JM
Acid Digestion - Microwave EPA CLP SOW	Complete		03/10/92	CG
Lead, TCLP Leachate METHOD 7420	ND mg/L	0.3	03/13/92	JM
TCLP Leachate extraction METHOD 1311	Complete		03/07/92	ET
Selenium, TCLP Leachate METHOD 7740	ND mg/L	0.007	03/12/92	WFL

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.

SPL ENVIRONMENTAL LABORATORIES, INC.



Certificate of Analysis No. F202493-03

Simon Hydro-Search
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

03/18/92

Project: Project No. 504867.00
Site: Baker Oil Tools
2800 W. Marland
Hobbs, NM
Sample No: MW1: 022792
Sample of: Water
Sampled by: Simon Hydro-Search
Sample Date: 02/27/92 18:00:00

A N A L Y T I C A L R E S U L T S

ANALYSIS/METHOD	RESULTS	DETECTION LIMIT
TOTAL PETROLEUM HYDROCARBONS	ND	1
Method-418.1	mg/L	mg/L

TPH ANALYZED BY: JC/DC

DATE/TIME: 03/03/92

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.
QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Incorporated

Shari L. Grice
Shari L. Grice



Simon Hydro-Search
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F202493-03B
Invoice #: 406525
Report Date: 03/18/92

Project No. 504867.00
MW1: 022792

Date Received: 02/29/92
Date Collected: 02/27/92 18:00:00

Test Name Method	Result Units	Detection Limit	Date Started	Anal
pH METHOD 150.1	7.52 pH units		03/03/92	DS

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.

SPL ENVIRONMENTAL LABORATORIES, INC.



Simon Hydro-Search
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F202493-03C
Invoice #: 406525
Report Date: 03/18/92

Project No. 504867.00
MW1: 022792

Date Received: 02/29/92
Date Collected: 02/27/92 18:00:00

Test Name Method	Result Units	Detection Limit	Date Started	Anal
Silver, TCLP Leachate METHOD 7760	ND mg/L	0.02	03/10/92	J
Arsenic, TCLP Leachate METHOD 7060	ND mg/L	0.007	03/11/92	WF
Barium, TCLP Leachate METHOD 6010	0.404 mg/L	0.007	03/09/92	D
Cadmium, TCLP Leachate METHOD 7130	ND mg/L	0.03	03/09/92	J
Chromium, TCLP Leachate METHOD 6010	ND mg/L	0.02	03/09/92	D
Mercury, TCLP Leachate METHOD 7470	ND mg/L	0.002	03/10/92	J
Acid Digestion - Microwave EPA CLP SOW	Complete		03/06/92	C
Lead, TCLP Leachate METHOD 7420	ND mg/L	0.3	03/09/92	J
TCLP Leachate extraction METHOD 1311	Complete		03/06/92	E
Selenium, TCLP Leachate METHOD 7740	ND mg/L	0.007	03/13/92	WF

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.

SPL ENVIRONMENTAL LABORATORIES, INC.

**ANALYTICAL RESULTS**

Volatile Organics by USEPA Method 8240

Client ID: MWI: 022792

SPL ID: F20249303D

Analyst: JC

Matrix: WATER

Dilution: 1

% Moisture: NA

Level: LOW

Received:

Extracted: *

Analyzed:

C o m p o u n d	Concentration, ug/L	
	Amount	M D L
Acetone	ND	10
Benzene	ND	5
Bromodichloromethane	ND	5
Bromoform	ND	5
Bromomethane	ND	10
2-Butanone	ND	20
Carbon Disulfide	ND	5
Carbon Tetrachloride	ND	5
Chlorobenzene	ND	5
Chloroethane	ND	10
2-Chloroethylvinylether	ND	10
Chloroform	ND	5
Chloromethane	ND	10
Dibromochloromethane	ND	5
1,1-Dichloroethane	ND	5
1,2-Dichloroethane	ND	5
1,1-Dichloroethene	ND	5
Trans-1,2-Dichloroethene	ND	5
1,2-Dichloropropane	ND	5
Cis-1,3-Dichloropropane	ND	5
Trans-1,3-Dichloropropane	ND	5
Ethylbenzene	ND	5
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
Methylene Chloride	5	5
Styrene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
1,1,1-Trichloroethane	ND	5
1,1,2-Trichloroethane	ND	5
Trichloroethene	ND	5
Trichlorofluoromethane	ND	5
Vinyl Acetate	ND	10
Vinyl Chloride	ND	10
Total Xylenes	ND	5

SURROGATES

1,2-Dichloroethane-D4	79% Recovery
Toluene-D8	108% Recovery
4-Bromofluorobenzene	90% Recovery

ND - Not Detected.

MDL - Method detection limit.

* - Surrogates out of range



Certificate of Analysis No. F202493-04

Simon Hydro-Search
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

03/18/92

Project: Project No. 504867.00
Site: Baker Oil Tools
2800 W. Marland
Hobbs, NM
Sample No: MW2: 022892
Sample of: Water
Sampled by: Simon Hydro-Search
Sample Date: 02/28/92 12:10:00

A N A L Y T I C A L R E S U L T S

ANALYSIS/METHOD -----	RESULTS -----	DETECTION LIMIT -----
TOTAL PETROLEUM HYDROCARBONS Method-418.1	ND mg/L	1 mg/L
TPH ANALYZED BY: JC/DC	DATE/TIME: 03/03/92	

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.
QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Incorporated

Shari L. Grice
Shari L. Grice



Simon Hydro-Search
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F202493-04B
Invoice #: 406525
Report Date: 03/18/92

Project No. 504867.00
MW2: 022892

Date Received: 02/29/92
Date Collected: 02/28/92 12:10:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
pH METHOD 150.1	7.21 pH units		03/03/92	DSE

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.

SPL ENVIRONMENTAL LABORATORIES, INC.



Simon Hydro-Search
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F202493-04C
Invoice #: 406525
Report Date: 03/18/92

Project No. 504867.00
MW2: 022892

Date Received: 02/29/92
Date Collected: 02/28/92 12:10:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Silver, TCLP Leachate METHOD 7760	ND mg/L	0.02	03/10/92	JM
Arsenic, TCLP Leachate METHOD 7060	ND mg/L	0.007	03/12/92	WFL
Barium, TCLP Leachate METHOD 6010	0.587 mg/L	0.007	03/09/92	DQ
Cadmium, TCLP Leachate METHOD 7130	ND mg/L	0.03	03/09/92	JM
Chromium, TCLP Leachate METHOD 6010	ND mg/L	0.02	03/09/92	DQ
Mercury, TCLP Leachate METHOD 7470	ND mg/L	0.002	03/10/92	JM
Acid Digestion - Microwave EPA CLP SOW	Complete		03/06/92	CG
Lead, TCLP Leachate METHOD 7420	ND mg/L	0.3	03/09/92	JM
TCLP Leachate extraction METHOD 1311	Complete		03/06/92	ET
Selenium, TCLP Leachate METHOD 7740	ND mg/L	0.007	03/13/92	WFL

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.

SPL ENVIRONMENTAL LABORATORIES, INC.



ANALYTICAL RESULTS

Volatile Organics by USEPA Method 8240

Client ID: MW2: 022892
SPL ID: F20249304D
Analyst: JC

Matrix: WATER
Dilution: 1
% Moisture: NA
Level: LOW

Received: 29-Feb-92
Extracted: *****
Analyzed: 10-Mar-92

Compound	Concentration, ug/L	
	Amount	MDL
Acetone	ND	10
Benzene	ND	5
Bromodichloromethane	ND	5
Bromoform	ND	5
Bromomethane	ND	10
2-Butanone	ND	20
Carbon Disulfide	ND	5
Carbon Tetrachloride	ND	5
Chlorobenzene	ND	5
Chloroethane	ND	10
2-Chloroethylvinylether	ND	10
Chloroform	ND	5
Chloromethane	ND	10
Dibromochloromethane	ND	5
1,1-Dichloroethane	ND	5
1,2-Dichloroethane	ND	5
1,1-Dichloroethene	ND	5
Trans-1,2-Dichloroethene	ND	5
1,2-Dichloropropane	ND	5
Cis-1,3-Dichloropropene	ND	5
Trans-1,3-Dichloropropene	ND	5
Ethylbenzene	ND	5
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
Methylene Chloride	6	5
Styrene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
1,1,1-Trichloroethane	ND	5
1,1,2-Trichloroethane	ND	5
Trichloroethene	ND	5
Trichlorofluoromethane	ND	5
Vinyl Acetate	ND	10
Vinyl Chloride	ND	10
Total Xylenes	ND	5

SURROGATES

1,2-Dichloroethane-D4	86%	Recovery
Toluene-D8	106%	Recovery
4-Bromofluorobenzene	88%	Recovery

ND - Not Detected.

MDL - Method detection limit.

* - Surrogates out of range



Certificate of Analysis No. F202493-05

Simon Hydro-Search
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

03/18/92

Project: Project No. 504867.00
Site: Baker Oil Tools
2800 W. Marland
Hobbs, NM
Sample No: MW2: 31.5-33
Sample of: Soil
Sampled by: Simon Hydro-Search
Sample Date: 02/27/92 14:30:00

A N A L Y T I C A L R E S U L T S

ANALYSIS/METHOD -----	RESULTS -----	DETECTION LIMIT -----
TOTAL PETROLEUM HYDROCARBONS Method-418.1	11 mg/Kg	10 mg/K
TPH ANALYZED BY: DC	DATE/TIME: 03/02/92	

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.
QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Incorporated

Shari L. Grice
Shari L. Grice



ANALYTICAL RESULTS

Volatile Organics by USEPA Method 8240

Client ID: MW2: 31.5-33

SPL ID: F202493058

Analyst: JC

Matrix: SOIL

Dilution: 1

% Moisture: 16

Level: LOW

Received: 29-Feb-92

Extracted: *****

Analyzed: 10-Mar-92

C o m p o u n d	Concentration, ug/Kg	
	Amount	M D L
Acetone	16	12
Benzene	ND	6
Bromodichloromethane	ND	6
Bromoform	ND	6
Bromomethane	ND	12
2-Butanone	ND	24
Carbon Disulfide	ND	6
Carbon Tetrachloride	ND	6
Chlorobenzene	ND	6
Chloroethane	ND	12
2-Chloroethylvinylether	ND	12
Chloroform	ND	6
Chloromethane	ND	12
Dibromochloromethane	ND	6
1,1-Dichloroethane	ND	6
1,2-Dichloroethane	ND	6
1,1-Dichloroethene	ND	6
Trans-1,2-Dichloroethene	ND	6
1,2-Dichloropropane	ND	6
Cis-1,3-Dichloropropene	ND	6
Trans-1,3-Dichloropropene	ND	6
Ethylbenzene	ND	6
2-Hexanone	ND	12
4-Methyl-2-Pentanone	ND	12
Methylene Chloride	7	6
Styrene	ND	6
1,1,2,2-Tetrachloroethane	ND	6
Tetrachloroethene	ND	6
Toluene	ND	6
1,1,1-Trichloroethane	ND	6
1,1,2-Trichloroethane	ND	6
Trichloroethene	ND	6
Trichlorofluoromethane	ND	6
Vinyl Acetate	ND	12
Vinyl Chloride	ND	12
Total Xylenes	ND	6

SURROGATES

1,2-Dichloroethane-D4	86%	Recovery
Toluene-D8	101%	Recovery
4-Bromofluorobenzene	100%	Recovery

ND - Not Detected.

MDL - Method detection limit.

* - Surrogates out of range



Simon Hydro-Search
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F202493-05C
Invoice #: 406525
Report Date: 03/18/92

Project No. 504867.00
MW2: 31.5-33

Date Received: 02/29/92
Date Collected: 02/27/92 14:30:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Silver, TCLP Leachate METHOD 7760	ND mg/L	0.02	03/13/92	JM
Arsenic, TCLP Leachate METHOD 7060	ND mg/L	0.007	03/12/92	WFL
Barium, TCLP Leachate METHOD 6010	0.938 mg/L	0.007	03/11/92	DQ
Cadmium, TCLP Leachate METHOD 7130	ND mg/L	0.03	03/13/92	JM
Chromium, TCLP Leachate METHOD 6010	ND mg/L	0.02	03/11/92	DQ
Mercury, TCLP Leachate METHOD 7470	ND mg/L	0.002	03/10/92	JM
Acid Digestion - Microwave EPA CLP SOW	Complete		03/10/92	CG
Lead, TCLP Leachate METHOD 7420	ND mg/L	0.3	03/13/92	JM
TCLP Leachate extraction METHOD 1311	Complete		03/07/92	ET
Selenium, TCLP Leachate METHOD 7740	ND mg/L	0.007	03/12/92	WFL

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.

SPL ENVIRONMENTAL LABORATORIES, INC.



Certificate of Analysis No. F202493-06

Simon Hydro-Search
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

03/18/92

Project: Project No. 504867.00
Site: Baker Oil Tools
2800 W. Marland
Hobbs, NM
Sample No: MW3: 31-33
Sample of: Soil
Sampled by: Simon Hydro-Search
Sample Date: 02/28/92 18:30:00

A N A L Y T I C A L R E S U L T S

ANALYSIS/METHOD -----	RESULTS -----	DETECTION LIMIT -----
TOTAL PETROLEUM HYDROCARBONS Method-418.1	ND mg/Kg	10 mg/Kg
TPH ANALYZED BY: DC	DATE/TIME: 03/02/92	

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.
QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL, Incorporated

Shari L. Grice
Shari L. Grice



ANALYTICAL RESULTS

Volatile Organics by USEPA Method 8240

Client ID: MW3: 31-33
SPL ID: F20249306B
Analyst: JC

Matrix: SOIL
Dilution: 1
% Moisture: 14
Level: LOW

Received: 29-Feb-92
Extracted: *****
Analyzed: 10-Mar-92

C o m p o u n d	Concentration, ug/Kg	
	Amount	M D L
Acetone	18	12
Benzene	ND	6
Bromodichloromethane	ND	6
Bromoform	ND	6
Bromomethane	ND	12
2-Butanone	ND	23
Carbon Disulfide	ND	6
Carbon Tetrachloride	ND	6
Chlorobenzene	ND	6
Chloroethane	ND	12
2-Chloroethylvinylether	ND	12
Chloroform	ND	6
Chloromethane	ND	12
Dibromochloromethane	ND	6
1,1-Dichloroethane	ND	6
1,2-Dichloroethane	ND	6
1,1-Dichloroethene	ND	6
Trans-1,2-Dichloroethane	ND	6
1,2-Dichloropropane	ND	6
Cis-1,3-Dichloropropene	ND	6
Trans-1,3-Dichloropropene	ND	6
Ethylbenzene	ND	6
2-Hexanone	ND	12
4-Methyl-2-Pentanone	ND	12
Methylene Chloride	7	6
Styrene	ND	6
1,1,2,2-Tetrachloroethane	ND	6
Tetrachloroethene	ND	6
Toluene	ND	6
1,1,1-Trichloroethane	ND	6
1,1,2-Trichloroethane	ND	6
Trichloroethene	ND	6
Trichlorofluoromethane	ND	6
Vinyl Acetate	ND	12
Vinyl Chloride	ND	12
Total Xylenes	ND	6

SURROGATES

1,2-Dichloroethane-D4	92%	Recovery
Toluene-D8	112%	Recovery
4-Bromofluorobenzene	108%	Recovery

ND - Not Detected.

MDL - Method detection limit.

* - Surrogates out of range



Simon Hydro-Search
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F202493-06C
Invoice #: 406525
Report Date: 03/18/92

Project No. 504867.00
MW3: 31-33

Date Received: 02/29/92
Date Collected: 02/28/92 18:30:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Silver, TCLP Leachate METHOD 7760	ND mg/L	0.02	03/13/92	JM
Arsenic, TCLP Leachate METHOD 7060	ND mg/L	0.007	03/12/92	WFL
Barium, TCLP Leachate METHOD 6010	1.46 mg/L	0.007	03/11/92	DQ
Cadmium, TCLP Leachate METHOD 7130	ND mg/L	0.03	03/13/92	JM
Chromium, TCLP Leachate METHOD 6010	ND mg/L	0.02	03/11/92	DQ
Mercury, TCLP Leachate METHOD 7470	ND mg/L	0.002	03/10/92	JM
Acid Digestion - Microwave EPA CLP SOW	Complete		03/10/92	CG
Lead, TCLP Leachate METHOD 7420	ND mg/L	0.3	03/13/92	JM
TCLP Leachate extraction METHOD 1311	Complete		03/07/92	ET
Selenium, TCLP Leachate METHOD 7740	ND mg/L	0.007	03/12/92	WFL

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.

SPL ENVIRONMENTAL LABORATORIES, INC.



Certificate of Analysis No. F202493-07

Simon Hydro-Search
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

03/18/92

Project: Project No. 504867.00
Site: Baker Oil Tools
2800 W. Marland
Hobbs, NM
Sample No: MW3: 022892
Sample of: Water
Sampled by: Simon Hydro-Search
Sample Date: 02/28/92 12:30:00

A N A L Y T I C A L R E S U L T S

ANALYSIS/METHOD	RESULTS	DETECTION LIMIT
TOTAL PETROLEUM HYDROCARBONS Method-418.1	ND mg/L	1 mg/L

TPH ANALYZED BY: JC/DC

DATE/TIME: 03/03/92

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.
QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Incorporated

Shari L. Grice
Shari L. Grice



Simon Hydro-Search
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F202493-07B
Invoice #: 406525
Report Date: 03/18/92

Project No. 504867.00
MW3: 022892

Date Received: 02/29/92
Date Collected: 02/28/92 12:30:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
pH METHOD 150.1	7.13 pH units		03/03/92	DSE

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.

SPL ENVIRONMENTAL LABORATORIES, INC.

**ANALYTICAL RESULTS****Volatile Organics by USEPA Method 8240**

Client ID: MW3: 022892
SPL ID: F20249307C
Analyst: JC

Matrix: WATER
Dilution: 1
% Moisture: NA
Level: LOW

Received: 29-Feb-92
Extracted: *****
Analyzed: 10-Mar-92

C o m p o u n d	Concentration, ug/L	
	Amount	M D L
Acetone	ND	10
Benzene	ND	5
Bromodichloromethane	ND	5
Bromoform	ND	5
Bromomethane	ND	10
2-Butanone	ND	20
Carbon Disulfide	ND	5
Carbon Tetrachloride	ND	5
Chlorobenzene	ND	5
Chloroethane	ND	10
2-Chloroethylvinylether	ND	10
Chloroform	ND	5
Chloromethane	ND	10
Dibromochloromethane	ND	5
1,1-Dichloroethane	ND	5
1,2-Dichloroethane	ND	5
1,1-Dichloroethane	ND	5
Trans-1,2-Dichloroethane	ND	5
1,2-Dichloropropane	ND	5
Cis-1,3-Dichloropropane	ND	5
Trans-1,3-Dichloropropane	ND	5
Ethylbenzene	ND	5
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
Methylene Chloride	6	5
Styrene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
1,1,1-Trichloroethane	ND	5
1,1,2-Trichloroethane	ND	5
Trichloroethene	ND	5
Trichlorofluoromethane	ND	5
Vinyl Acetate	ND	10
Vinyl Chloride	ND	10
Total Xylenes	ND	5

SURROGATES

1,2-Dichloroethane-D4	84% Recovery
Toluene-D8	110% * Recovery
4-Bromofluorobenzene	88% Recovery

ND - Not Detected.

MDL - Method detection limit.

* - Surrogates out of range



Simon Hydro-Search
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F202493-07D
Invoice #: 406525
Report Date: 03/18/92

Project No. 504867.00
MW3: 022892

Date Received: 02/29/92
Date Collected: 02/28/92 12:30:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Silver, TCLP Leachate METHOD 7760	ND mg/L	0.02	03/10/92	JM
Arsenic, TCLP Leachate METHOD 7060	ND mg/L	0.007	03/12/92	WFL
Barium, TCLP Leachate METHOD 6010	0.544 mg/L	0.007	03/09/92	DQ
Cadmium, TCLP Leachate METHOD 7130	ND mg/L	0.03	03/09/92	JM
Chromium, TCLP Leachate METHOD 6010	ND mg/L	0.02	03/09/92	DQ
Mercury, TCLP Leachate METHOD 7470	ND mg/L	0.002	03/10/92	JM
Acid Digestion - Microwave EPA CLP SOW	Complete		03/06/92	CG
Lead, TCLP Leachate METHOD 7420	ND mg/L	0.3	03/09/92	JM
TCLP Leachate extraction METHOD 1311	Complete		03/06/92	ET
Selenium, TCLP Leachate METHOD 7740	ND mg/L	0.007	03/13/92	WFL

ND = Parameter analyzed for but not detected. The reported limit is the minimum attainable detection limit for the sample.

SPL ENVIRONMENTAL LABORATORIES, INC.

2A
WATER VOLATILE SURROGATE RECOVERY

Lab Name: SPL HOUSTON Contract: _____

Lab Code: SPL Case No.: 202493 SAS No.: _____ SDG No.: 202493

	EPA SAMPLE NO.	S1 (TOL) #	S2 (BFB) #	S3 (DCE) #	OTHER	TOT OUT
01	MW1_022792	108	90	79	0	0
02	MW2_022892	106	88	86	0	0
03	MW3_022892	110	88	84	0	0
04	MW3_022892	110	88	84	0	0
05	MW3_022892	110	88	84	0	0
06	VBK01	102	96	89	0	0

QC LIMITS

S1 (TOL) = Toluene-d8 (88-110)
S2 (BFB) = Bromofluorobenzene (86-115)
S3 (DCE) = 1,2-Dichloroethane-d4 (76-114)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

28
SOIL VOLATILE SURROGATE RECOVERY

Lab Name: SPL HOUSTON Contract: _____

Lab Code: SPL Case No.: 202493 SAS No.: _____ SDG No.: 202493

Level: (low/med) LOW

	EPA SAMPLE NO.	S1 (TOL) #	S2 (BFB) #	S3 (DCE) #	OTHER	TOT OUT
01	B9_34_5-36	94	87	80	0	0
02	MW1_33_5-35	96	95	93	0	0
03	MW1_33_5-35	96	95	93	0	0
04	MW2_31_5-33	101	100	86	0	0
05	MW3_31-33	112	108	92	0	0
06	VBK01	100	90	93	0	0
07	VBK01	98	101	86	0	0

QC LIMITS

S1 (TOL) = Toluene-d8 (81-117)
S2 (BFB) = Bromofluorobenzene (74-121)
S3 (DCE) = 1,2-Dichloroethane-d4 (70-121)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPL HOUSTON Contract: _____Lab Code: SPL Case No.: 202493 SAS No.: _____ SDG No.: 202493Matrix Spike - EPA Sample No.: MW3_022892

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	50.0	0	40.2	80	61-145
Trichloroethene	50.0	0	57.6	115	71-120
Benzene	50.0	0	55.0	110	76-127
Toluene	50.0	0	57.4	115	76-125
Chlorobenzene	50.0	0	59.6	119	75-130

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD REC.
1,1-Dichloroethene	50.0	48.9	98	-20 *	14 61-145
Trichloroethene	50.0	56.4	113	2	14 71-120
Benzene	50.0	53.6	107	3	11 76-127
Toluene	50.0	58.4	117	-2	13 76-125
Chlorobenzene	50.0	54.8	110	8	13 75-130

* Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

D: 1 out of 5 outside limitsSpike Recovery: 0 out of 10 outside limits

REMARKS: 8240W, 202493, MW3: 022892, L, W, F20249307C, V, E, 5.0 MLS,
 PACK, 0310VL2B2, 0310BFB3, 0310VLBB1, , , , 45/3-22008, INST B1,

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPL HOUSTON Contract: _____Lab Code: SPL Case No.: 203006 SAS No.: _____ SDG No.: 202493Matrix Spike - EPA Sample No.: S1025-1 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	68.5	0	66.7	97	59-172
Trichloroethene	68.5	0	77.0	112	62-137
Benzene	68.5	0	77.5	113	66-142
Toluene	68.5	0	74.1	108	59-139
Chlorobenzene	68.5	0	76.0	111	60-133

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	REC.
1,1-Dichloroethene	68.5	77.3	113	-15	22	59-172
Trichloroethene	68.5	84.9	124	-10	24	62-137
Benzene	68.5	85.3	124	-9	21	66-142
Toluene	68.5	84.9	124	-14	21	59-139
Chlorobenzene	68.5	85.3	124	-11	21	60-133

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limitsSpike Recovery: 0 out of 10 outside limitsCOMMENTS: 8240S,203006,,S1025-1,L,S,F20300602A,V,E,5.0 GRS,
PACK,0306VS2B2,0306BFB2,0306VSB1,,,,45/3-220e8,INST B1,

4A
VOLATILE METHOD BLANK SUMMARY

Lab Name: SPL HOUSTON Contract: _____
Lab Code: SPL Case No.: 202493 SAS No.: _____ SDG No.: 202493
Lab File ID: 0309VSBB1 Lab Sample ID: VSBLK010309B
Date Analyzed: 03/09/92 Time Analyzed: 943
Matrix: (soil/water) SOIL Level: (low/med) LOW
Instrument ID: B1

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	MW1_33_5-35	F20249302B	V249302	1724
02	MW1_33_5-35	F20249302B	V249302	1724

COMMENTS: SPLINC,BLANK,,VBLK01,L,S,VSBLK010309B,V,B,
PACK,0309VS2B1,0309BFB1,0309VSBB1,,,,45/3-220@8,INST B1,



ANALYTICAL RESULTS

Volatile Organics by USEPA Method 8240

Client ID: VBLK01
SPL ID: VBLK010309B
Analyst: JC

Matrix: SOIL
Dilution: 1
% Moisture: NA
Level: LOW

Received:
Extracted: *****
Analyzed: 09-Mar-92

Compound	Concentration, ug/Kg	
	Amount	M D L
Acetone	ND	10
Benzene	ND	5
Bromodichloromethane	ND	5
Bromoform	ND	5
Bromomethane	ND	10
2-Butanone	ND	20
Carbon Disulfide	ND	5
Carbon Tetrachloride	ND	5
Chlorobenzene	ND	5
Chloroethane	ND	10
2-Chloroethylvinylether	ND	10
Chloroform	ND	5
Chloromethane	ND	10
Dibromochloromethane	ND	5
1,1-Dichloroethane	ND	5
1,2-Dichloroethane	ND	5
1,1-Dichloroethene	ND	5
Trans-1,2-Dichloroethene	ND	5
1,2-Dichloropropane	ND	5
Cis-1,3-Dichloropropene	ND	5
Trans-1,3-Dichloropropene	ND	5
Ethylbenzene	ND	5
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
Methylene Chloride	ND	5
Styrene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
1,1,1-Trichloroethane	ND	5
1,1,2-Trichloroethane	ND	5
Trichloroethene	ND	5
Trichlorofluoromethane	ND	5
Vinyl Acetate	ND	10
Vinyl Chloride	ND	10
Total Xylenes	ND	5

SURROGATES

1,2-Dichloroethane-D4	93%	Recovery
Toluene-D8	100%	Recovery
4-Bromofluorobenzene	90%	Recovery

ND - Not Detected.

MDL - Method detection limit.

* - Surrogates out of range

4A
VOLATILE METHOD BLANK SUMMARY

Lab Name: SPL HOUSTON Contract: _____
Lab Code: SPL Case No.: 202493 SAS No.: _____ SDG No.: 202493
Lab File ID: 0310VLBB1 Lab Sample ID: VLBLK010310B
Date Analyzed: 03/10/92 Time Analyzed: 1517
Matrix: (soil/water) WATER Level: (low/med) LOW
Instrument ID: B1

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	MW1_022792	F20249303D	V249303A	1652
02	MW2_022892	F20249304D	V249304A	1726
03	MW3_022892	F20249307C	V249307A	1803
04	MW3_022892	F20249307C	V249307A	1803
05	MW3_022892	F20249307C	V249307A	1803

COMMENTS: SPLINC,BLANK,,VBLK01,L,W,VLBLK010310B,V,B,
PACK,0310VL2B2,0310BFB3,0310VLBB1,,,,45/3-220@8,INST B1,



ANALYTICAL RESULTS

Volatile Organics by USEPA Method 8240

Client ID: VBLK01
SPL ID: VLBLK010310B
Analyst: JC

Matrix: WATER
Dilution: 1
% Moisture: NA
Level: LOW

Received:
Extracted: *****
Analyzed: 10-Mar-92

Compound	Concentration, ug/L	
	Amount	MDL
Acetone	ND	10
Benzene	ND	5
Bromodichloromethane	ND	5
Bromoform	ND	5
Bromomethane	ND	10
2-Butanone	ND	20
Carbon Disulfide	ND	5
Carbon Tetrachloride	ND	5
Chlorobenzene	ND	5
Chloroethane	ND	10
2-Chloroethylvinylether	ND	10
Chloroform	ND	5
Chloromethane	ND	10
Dibromochloromethane	ND	5
1,1-Dichloroethane	ND	5
1,2-Dichloroethane	ND	5
1,1-Dichloroethene	ND	5
Trans-1,2-Dichloroethene	ND	5
1,2-Dichloropropane	ND	5
Cis-1,3-Dichloropropene	ND	5
Trans-1,3-Dichloropropene	ND	5
Ethylbenzene	ND	5
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
Methylene Chloride	7	5
Styrene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
1,1,1-Trichloroethane	ND	5
1,1,2-Trichloroethane	ND	5
Trichloroethene	ND	5
Trichlorofluoromethane	ND	5
Vinyl Acetate	ND	10
Vinyl Chloride	ND	10
Total Xylenes	ND	5

SURROGATES

1,2-Dichloroethane-D4	89% Recovery
Toluene-D8	102% Recovery
4-Bromofluorobenzene	96% Recovery

ND - Not Detected.

MDL - Method detection limit.

* - Surrogates out of range

4A
VOLATILE METHOD BLANK SUMMARY

Lab Name: SPL HOUSTON Contract: _____
Lab Code: SPL Case No.: 202493 SAS No.: _____ SDG No.: 202493
Lab File ID: 0310VSBB1 Lab Sample ID: VSBLK010310B
Date Analyzed: 03/10/92 Time Analyzed: 952
Matrix: (soil/water) SOIL Level: (low/med) LOW
Instrument ID: B1

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	B9_34_5-36	F20249301B	V249301A	1036
02	MW2_31_5-33	F20249305B	V249305A	1110
03	MW3_31-33	F20249306B	V249306A	1148

COMMENTS: SPLINC,BLANK,,VBLK01,L,S,VSBLK010310B,V,B,
PACK,0310VS2B1,0310BFB1,0310VSBB1,,,,45/3-220@8,INST B1,



ANALYTICAL RESULTS

Volatile Organics by USEPA Method 8240

Client ID: VBLK01
SPL ID: VBLK010310B
Analyst: JC

Matrix: SOIL
Dilution: 1
% Moisture: NA
Level: LOW

Received:
Extracted: *****
Analyzed: 10-Mar-92

C o m p o u n d	Concentration, ug/Kg	
	Amount	M D L
Acetone	ND	10
Benzene	ND	5
Bromodichloromethane	ND	5
Bromoform	ND	5
Bromomethane	ND	10
2-Butanone	ND	20
Carbon Disulfide	ND	5
Carbon Tetrachloride	ND	5
Chlorobenzene	ND	5
Chloroethane	ND	10
2-Chloroethylvinylether	ND	10
Chloroform	ND	5
Chloromethane	ND	10
Dibromochloromethane	ND	5
1,1-Dichloroethane	ND	5
1,2-Dichloroethane	ND	5
1,1-Dichloroethene	ND	5
Trans-1,2-Dichloroethene	ND	5
1,2-Dichloropropane	ND	5
Cis-1,3-Dichloropropene	ND	5
Trans-1,3-Dichloropropene	ND	5
Ethylbenzene	ND	5
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
Methylene Chloride	ND	5
Styrene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
1,1,1-Trichloroethane	ND	5
1,1,2-Trichloroethane	ND	5
Trichloroethene	ND	5
Trichlorofluoromethane	ND	5
Vinyl Acetate	ND	10
Vinyl Chloride	ND	10
Total Xylenes	ND	5

SURROGATES

1,2-Dichloroethane-D4	86%	Recovery
Toluene-D8	98%	Recovery
4-Bromofluorobenzene	101%	Recovery

ND - Not Detected.

MDL - Method detection limit.

* - Surrogates out of range

SPL AA QC FORM

TEST CODE: AgDATE: 3/13/92ANALYST: gmMETHOD: ELAATIME: 14:23DETECTION LIMIT: 0.02# SAMPLES IN SET: 6UNITS: mg/LSAMPLE #'S IN SET: 02447-5C ; 02493-1C, 2C, 5C, 6C ; 03049-1C

STANDARDS	EM, %T, ABS.	ACTUAL CONC.	THEORET. CONC.	%RECOVERY	UPPER LIMIT	LOWER LIMIT
BLANK	0.001	0.000	0.000	—	—	—
#1	0.073	0.500	0.500	100.0	105%	95%
#2	0.142	0.992	1.000	99.2	↓	↓
#3	0.278	1.986	2.000	99.3	↓	↓
#4						
#5						

CONTINUING CALIBRATION

ID	THEORETICAL	ACTUAL	% RECOVERY	UPPER LIMIT	LOWER LIMIT
ICV	0.800	0.769	96.1	110%	90%
LCS	1.000	0.975	97.5	120%	80%
CCV ₁	↓	1.080	108.0	110%	90%
CCV ₂	↓	1.073	107.3	↓	↓
PB 3/11	0	ND	NA	-0.02	-0.02
PB 3/10	↓	↓	↓	↓	↓
PB 3/10 EXT #2	↓	↓	↓	↓	↓

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL})}{(\text{THEORETICAL})} \times 100$$

REVIEWED BY: Margo MarionAPPROVED BY: Cynthia SchreinerDATE: 3/13/92DATE: 3/13/92

TEST: AgMATRIX: TCR-2076ANALYSIS DATE: 3/13/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
02447-5C	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPD
02447-5C	ND	0.050	0.045	0.048	90.0	96.0	6	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Melinda MarianiAPPROVED BY: Cynthia SchreinerDATE: 3/13/92DATE: 3/13/92

TEST CODE: AgDATE: 3/10/92ANALYST: JmMETHOD: FLAATIME: 14:34DETECTION LIMIT: 0.02# SAMPLES IN SET: 27UNITS: mg/LSAMPLE #'S IN SET: 02461-1A; 02483-1A, 2A; 02485-1A, 2A; 02490-1A; 0245A-C,
0247C-1C; 02481-1C; 02493-3C, 4C, 7D; 03107-1D-8D; 03074-1C; 03001-1A; 03045-1E-5E

STANDARDS	EM, %T, ABS.	ACTUAL CONC.	THEORET. CONC.	%RECOVERY	UPPER LIMIT	LOWER LIMIT
BLANK	-0.001	0.000	0.000	—	—	—
#1	0.075	0.500	0.500	100.0	105%	95%
#2	0.145	0.995	1.000	99.5	↓	↓
#3	0.281	1.981	2.000	99.0	↓	↓
#4						
#5						

CONTINUING CALIBRATION

ID	THEORETICAL	ACTUAL	% RECOVERY	UPPER LIMIT	LOWER LIMIT
ICV	0.800	0.829	103.6	110%	90%
LCS	1.000	0.992	99.2	120%	80%
CCV ₁		1.036	103.6	110%	90%
CCV ₂		1.054	105.4		
CCV ₃		1.014	101.4		
CCV ₄		1.032	103.2		
CCV ₅		1.020	102.0		
CCV ₆		1.031	103.1		
CCV ₇	↓	1.015	101.5	↓	↓
Cont'd on next page. Jm					

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL})}{(\text{THEORETICAL})} \times 100$$

REVIEWED BY: Melinda MatiamAPPROVED BY: Agatha SilvermanDATE: 3/10/92DATE: 3/10/92

TEST CODE: AgDATE: 3/10/92ANALYST: JmMETHOD: FUAATIME: 14:34DETECTION LIMIT: 0.02

SAMPLES IN SET: _____

UNITS: mg/LSAMPLE #'S IN SET: Cont'd from last page Jm.

STANDARDS	EM, %T, ABS.	ACTUAL CONC.	THEORET. CONC.	%RECOVERY	UPPER LIMIT	LOWER LIMIT
BLANK						
#1						
#2						
#3						
#4						
#5						

CONTINUING CALIBRATION

ID	THEORETICAL	ACTUAL	% RECOVERY	UPPER LIMIT	LOWER LIMIT
<u>rev PB 3/5</u>	<u>0</u>	<u>ND</u>	<u>NA</u>	<u>0.02</u>	<u>-0.02</u>
<u>Les PB 3/6</u>	↓	↓	↓	↓	↓
<u>PB 3/9</u>	↓	↓	↓	↓	↓
<u>PB 3/5 water</u>	↓	↓	↓	↓	↓
<u>PB 3/3 water</u>	↓	↓	↓	↓	↓
<u>PB 3/4 water</u>	↓	↓	↓	↓	↓

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL})}{(\text{THEORETICAL})} \times 100$$
REVIEWED BY: Meara MarianiAPPROVED BY: Cynthia SchinnerDATE: 3/10/92DATE: 3/10/92

TEST: AgMATRIX: ICP- soilANALYSIS DATE: 3/10/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
02461-1A	ND	ND	NA	20	1
02490-1A	↓	↓	↓	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPD
02461-1A	ND	0.050	0.049	0.050	98.0	100.0	2	75 - 125	20
02490-1A	↓	↓	0.041	0.041	82.0	82.0	0	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Meara MarianiDATE: 3/10/92APPROVED BY: C. J. SchumacherDATE: 3/10/92

TEST: AgMATRIX: ICP-OtherANALYSIS DATE: 3/10/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
02481-IC	ND	ND	NA	20	1
02470-IC	↓	↓	↓	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPD
02481-IC	ND	0.050	0.058	0.059	116.0	118.0	2	75 - 125	20
02470-IC	↓	↓	0.052	0.054	104.0	108.0	4	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Meara MartinDATE: 3/10/92APPROVED BY: Cynthia SchreinerDATE: 3/10/92

TEST:

Ag

MATRIX:

ICP-liquid

ANALYSIS DATE:

3/10/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
02493-3C	ND	ND	NA	20	1
03107-1D	↓	↓	↓	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPD
02493-3C	ND	0.050	0.037	0.035	74.0	70.0	6	75 - 125	20
03107-1D	↓	↓	0.039	0.040	78.0	80.0	23	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY:

Mearza Mariam

APPROVED BY:

Arthur Silverman

DATE:

3/10/92

DATE:

3/10/92

TEST: AgMATRIX: waterANALYSIS DATE: 3/10/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
03045-5E	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPD
03045-5E	ND	0.050	0.056	0.055	112.0	110.0	2	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Meagan MarianAPPROVED BY: Cynthia SchreinerDATE: 3/10/92DATE: 3/10/92

0312A

SPL AA QC FORM

TEST CODE:

AS

DATE:

3/12/92

ANALYST:

WFL

METHOD:

GFAA

TIME:

07:29

DETECTION LIMIT:

6

SAMPLES IN SET:

41

UNITS:

ug/L

SAMPLE #'S IN SET:

02490-1A; 02454-1c; 02493-1c2c5c6c; 02470-1c;

02493-1c7b; 02049-1c; 02493-3c(GC only); 03056-1A-2A; 03021-1A-3

03043-7A-9A; 02477-5c; 03042-1A-6A; 03083-1A-6A; 03084-7A-8A

03097-1A-6A; 03098-7A-8A

STANDARDS | EM, %T, ABS. | CONC. | CONC. | %RECOVERY | UPPER LIMIT | LOWER LIMIT

BLANK	-0.010	0.0	0.0	NA	-	-
#1	0.118	25.0	25.0	100.0%	105.0%	95.0%
#2	0.260	50.5	50.0	101.0%	↓	↓
#3	0.528	100.1	100.0	100.1%	↓	↓
#4						
#5						

CONTINUING CALIBRATION

ID	THEORETICAL	ACTUAL	% RECOVERY	UPPER LIMIT	LOWER LIMIT
ICV	75.0	76.1	101.5%	110.0%	90.0%
LCS	40.0	41.9	104.8%	120.0%	80.0%
CCV ₁	50.0	46.6	93.2%	110.0%	90.0%
CCV ₂		48.0	96.0%	↓	↓
CCV ₃		51.4	102.8%	↓	↓
CCV ₄		51.7	103.4%	↓	↓
CCV ₅		45.0	90.0%	↓	↓
CCV ₆		51.2	102.4%	↓	↓
CCV ₇	↓	52.5	105.0%	↓	↓
PR316	0	NA	NA	+6	-6
PR319	↓	↓	↓	↓	↓
PR312	↓	↓	↓	↓	↓

RECOVERY = $\frac{(\text{ACTUAL})}{(\text{THEORETICAL})} \times 100$

REVIEWED BY:

Margo Marlam

APPROVED BY:

Cynthia Schmeier

DATE:

3/12/92

DATE:

3/12/92

TEST: ASMATRIX: LeissolANALYSIS DATE: 3/12/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
03097-1A	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RP
03097-1A	ND	40.0	32.5	32.3	81.2%	80.8%	1	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Maria MarionDATE: 3/12/92APPROVED BY: C. J. SchmeierDATE: 3/12/92

TEST:

AS

MATRIX:

base/red

ANALYSIS DATE:

3/12/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
03056-2A	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	% RPI
03056-2A ND		40.0	37.7	37.6	94.2%	94.0%	0	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY:

Melinda Mariani

APPROVED BY:

Cynthia Schreiner

DATE:

3/12/92

DATE:

3/12/92

TEST:

AS

MATRIX:

TECP-Filtered

ANALYSIS DATE:

3/12/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
02493-3c	ND	ND	N/A	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	% RI
02493-3c	ND	40.0	36.4	36.5	91.0%	91.2%	0	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY:

Melinda Mariani

APPROVED BY:

Capt. Paul Schreiner

DATE:

3/12/92

DATE:

3/12/92

TEST:

AS

MATRIX:

TCLP other

ANALYSIS DATE:

3/12/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
02470-1C	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RP
02470-1C	ND	40.0	36.0	35.1	90.0%	87.8%	3	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY:

Meara Mariani

APPROVED BY:

Cybil Schmechel

DATE:

3/12/92

DATE:

3/12/92

TEST:

AS

MATRIX:

TCLP- soil

ANALYSIS DATE:

3/12/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
02490-1A	ND	NS	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RP
02490-1A	NS	40.0	33.9	32.9	84.8%	82.2%	3	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY:

Melissa Mariani

APPROVED BY:

William Silver

DATE:

3/12/92

DATE:

3/12/92

0311D

SPL AA QC FORM

TEST CODE: ASDATE: 3/11/92ANALYST: WFLMETHOD: GFAATIME: 14:55DETECTION LIMIT: 6SAMPLES IN SET: 20UNITS: ug/LSAMPLE #'S IN SET: 03074-1C; 03001-1A; 03045-1E-5E; 02483-1A-;
02493-3C; 03107-1D-8D; 02485-1A-2A.

STANDARDS	EM, %T, ABS.	ACTUAL CONC.	THEORET. CONC.	%RECOVERY	UPPER LIMIT	LOWER LIMIT
BLANK	0.005	0.0	0.0	NA	—	—
#1	0.123	25.0	25.0	100.0%	105.0%	95.0%
#2	0.254	50.5	50.0	101.0%	↓	↓
#3	0.500	100.1	100.0	100.1%	↓	↓
#4						
#5						

CONTINUING CALIBRATION

ID	THEORETICAL	ACTUAL	% RECOVERY	UPPER LIMIT	LOWER LIMIT
ICV	75.0	72.6	96.8%	110.0%	90.0%
LCS	40.0	34.5	86.2%	120.0%	80.0%
CCV ₁	50.0	51.1	102.2%	110.0%	90.0%
CCV ₂	↓	54.0	108.0%	↓	↓
CCV ₃	↓	49.1	98.2%	↓	↓
PB ³ /6	0	NS	NA	+6	-6
PB ³ /7	0	NS	NA	+6	-6

RECOVERY = $\frac{(\text{ACTUAL})}{(\text{THEORETICAL})} \times 100$ REVIEWED BY: MARGA MARIAMAPPROVED BY: Agatha S. S. S.DATE: 3/12/92DATE: 3/12/92

TEST:

AS

MATRIX:

Water

ANALYSIS DATE:

3/11/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
03045-TE	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RP
03045-1E	ND	40.0	32.6	31.8	81.5%	79.5%	2	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY:

Maria Maniam

APPROVED BY:

Cynthia Schaner

DATE:

3/12/92

DATE:

3/12/92

TEST:

AS

MATRIX:

TELP-Filtered

ANALYSIS DATE:

3/11/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
02493-3C	NS	NS	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RP
02493-3C	NS	40.0	45.9	46.8	114.8%	117.0%	2	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY:

Margo Mariani

APPROVED BY:

Cy. Howard Silver

DATE:

3/12/92

DATE:

3/12/92

0312A

SPL AA QC FORM

EST CODE:

AS

DATE:

3/12/92

ANALYST:

WFL

METHOD:

GFAA

TIME:

07:29

DETECTION LIMIT:

6

SAMPLES IN SET:

41

UNITS:

ug/L

SAMPLE #'S IN SET:

02490-1A; 02454-1c; 02493-1c; 02566c; 02470-1c;

02493-1c; 02049-1c; 02493-3c (GC only); 03056-1A-2A; 03031-1A-3

03043-7A-2A; 02497-5c; 03042-1A-6A; 03083-1A-6A; 03084-7A-8A

STANDARDS	EM, %T, ABS.	CONC.	THEORET. CONC.	%RECOVERY	UPPER LIMIT	LOWER LIMIT
-----------	--------------	-------	----------------	-----------	-------------	-------------

BLANK	-0.010	0.0	0.0	NA	-	-
#1	0.118	25.0	25.0	100.0%	105.0%	95.0%
#2	0.260	50.5	50.0	101.0%		
#3	0.528	100.1	100.0	100.1%		
#4						
#5						

CONTINUING CALIBRATION

ID	THEORETICAL	ACTUAL	% RECOVERY	UPPER LIMIT	LOWER LIMIT
ICV	75.0	76.1	101.5%	110.0%	90.0%
LCS	40.0	41.9	104.8%	120.0%	80.0%
CCV ₁	50.0	46.6	93.2%	110.0%	90.0%
CCV ₂		48.0	96.0%		
CCV ₃		51.4	102.8%		
CCV ₄		51.7	103.4%		
CCV ₅		45.0	90.0%		
CCV ₆		51.2	102.4%		
CCV ₇		52.5	105.0%		
PR316	0	NB	NA	+6	-6
PR319					
PR312					

RECOVERY = $\frac{(\text{ACTUAL})}{(\text{THEORETICAL})} \times 100$

REVIEWED BY:

Margo Mawam

APPROVED BY:

Cynthia Schinner

TE:

3/12/92

DATE:

3/12/92

TEST:

AS

MATRIX:

base lead

ANALYSIS DATE:

3/12/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
03097-1A	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	% RPD
03097-1A	ND	40.0	32.5	32.3	81.2%	80.8%	1	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY:

Melinda Marion

APPROVED BY:

Arthur Schmeier

DATE:

3/12/92

DATE:

3/12/92

TEST:

AS

MATRIX:

base/red

ANALYSIS DATE:

3/12/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
03056-7A	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	% RE
03056-2A	ND	40.0	37.7	37.6	94.2%	94.0%	0	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY:

Melinda Martin

APPROVED BY:

Cynthia Schreiner

DATE:

3/12/92

DATE:

3/12/92

TEST:

AS

MATRIX:

TCLP-Filtered

ANALYSIS DATE:

3/12/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
02493-3c	NS	NS	N/A	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RP
02493-3c	NS	40.0	36.4	36.5	91.0%	91.2%	0	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY:

Melinda Mariani

APPROVED BY:

Capt. Paul Schmeier

DATE:

3/12/92

DATE:

3/12/92

TEST:

AS

MATRIX:

TCLP other

ANALYSIS DATE:

3/12/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
02470-1c	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	% RE
02470-1c	ND	40.0	36.0	35.1	90.0%	87.8%	3	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY:

Melissa Mariani

APPROVED BY:

A. J. Schmeider

DATE:

3/12/92

DATE:

3/12/92

TEST:

AS

MATRIX:

TCLP- soil

ANALYSIS DATE:

3/12/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
02490-1A	NS	NS	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	% RPI
02490-1A	NS	40.0	33.9	32.9	84.8%	82.2%	3	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY:

Margie Marion

APPROVED BY:

William Silver

DATE:

3/12/92

DATE:

3/12/92

SPL ICP (METHOD 6010/200.7) STANDARD QC FORM

DATE: 3/11/92

TIME: 1239

FILE: A0311

ANALYST: PS

SAMPLES IN SET: 16

UNITS: mg/L

SAMPLE #'s IN SET: 3099 1c, 3049 1c, 2493 1c, 2c, 5c, 6c, 3096 1d
2393 1d, 2d, 3d, 2394 1d, 2d (2394 2H QC ONLY)
2464 1c, 2c, 3129 1d, 3001 1A

TEST CODE	IDL	BLANK		STANDARD	
		EM	CONC	EM	CONC
Ag	0.02	-0.001	0.000	3.40	10.00
As	0.1	-0.001		4.93	
Ba	0.006	0.000		4.42	
Cr	0.02	0.003		3.92	
Cd	0.01	0.001		2.10	
Pb	0.2	0.016		1.04	
Se	0.2	-0.023		2.29	
Al	0.2	0.054		1.68	
Fe	0.01	0.002		4.77	
Zn	0.009	0.025	✓	5.18	✓

REVIEWED BY: Melissa Maxham

APPROVED BY: Cynthia Schuenen

DATE: 3/12/92

DATE: 3/12/92

SPL ICP CALIBRATION VERIFICATION

ID	TEST CODE	TRUE CONC.	FOUND CONC.	% RECOVERY	QC LIMITS	
					UPPER	LOWER
ICV	Ag	5.00	5.40	108.0	110.2	90.2
	As		4.93	98.6		
	Ba	↓	5.22	104.4		
	Ce	5.52	5.43	98.4		
	Cd	5.00	5.09	101.8		
	Pb		5.09	101.8		
	Se		5.03	100.6		
	Al		4.96	99.2		
	Fe		5.38	107.6		
↓	Zn	↓	4.91	99.4		
CCV1	Ag	5.00	5.42	108.4		
	As		5.03	100.6		
	Ba	↓	5.27	105.4		
	Ce	5.52	5.48	99.3		
	Cd	5.00	5.15	103.0		
	Pb		5.18	103.6		
	Se		5.24	104.8		
	Al		4.94	98.8		
	Fe		5.42	108.4		
↓	Zn	↓	5.03	100.6		
CCV2	Ag	5.00	5.43	108.6		
	As		5.05	101.0		
↓	Ba	↓	5.31	106.2	↓	↓

CALCULATION: % RECOVERY = $\frac{(\text{FOUND CONC.})}{(\text{TRUE CONC.})} \times 100$

REVIEWED BY: Meara Mariani

APPROVED BY: [Signature]

DATE: 3/12/92

DATE: 3/12/92

SPL ICP CALIBRATION VERIFICATION

ID	TEST CODE	TRUE CONC.	FOUND CONC.	% RECOVERY	QC LIMITS	
					UPPER	LOWER
CCV2	Cr	5.52	5.55	100.5	110.2	90.8
	Cd	5.20	5.20	104.0		
	Pb		5.32	106.4		
	Se		5.21	104.2		
	Al		4.95	99.0		
	Fe		5.47	109.4		
✓	Zn	✓	5.10	102.0		
CCV3	Ag	5.00	5.37	107.4		
	As		5.00	100.0		
	Ba	✓	5.35	107.0		
	Cr	5.52	5.55	100.5		
	Cd	5.00	5.22	104.4		
	Pb		5.28	105.6		
	Se		5.18	103.6		
	Al		4.94	98.8		
	Fe		5.45	109.0		
✓	Zn	✓	5.10	102.0		
CCV4	Ag	5.00	5.25	105.0		
	As		4.96	99.2		
	Ba	✓	5.24	104.8		
	Cr	5.52	5.45	98.7		
	Cd	5.00	5.13	102.6		
✓	Pb	✓	5.25	105.0	✓	✓

CALCULATION: % RECOVERY = $\frac{(\text{FOUND CONC.})}{(\text{TRUE CONC.})} \times 100$

REVIEWED BY: Marga MuriamAPPROVED BY: Gyullu ShueniDATE: 3/12/92DATE: 3/12/92

SPL ICP CALIBRATION VERIFICATION

ID	TEST CODE	TRUE CONC.	FOUND CONC.	% RECOVERY	QC LIMITS	
					UPPER	LOWER
CCV4	Se	5.00	5.15	103.0	11.2	9.2
	Al		4.95	97.0		
	Fe		5.35	107.0		
✓	Zn		5.05	101.0		
CCV5	Ag		5.26	105.2		
	As		4.93	97.6		
	BA	✓	5.29	105.8		
	Ca	5.52	5.45	98.7		
	Cd	5.00	5.09	101.8		
	Pb		5.21	104.2		
	Se		5.14	102.8		
	Al		4.87	97.4		
	Fe		5.34	106.8		
✓	Zn	✓	5.03	100.6	✓	✓
PB 7/0	Ag	0.0	NP	N/A	0.02	-0.02
	As				0.1	-0.1
	Pb				0.2	-0.2
	BA				0.006	-0.006
	Se				0.2	-0.2
	Cd				0.01	-0.01
✓	Ca	✓	✓	✓	0.02	-0.02
PB 7/3	Ag	0.0	NP	N/A	0.02	-0.02
✓	BA	✓	✓	✓	0.006	-0.006

CALCULATION: % RECOVERY = $\frac{(\text{FOUND CONC.})}{(\text{TRUE CONC.})} \times 100$

REVIEWED BY: Maga MarianiAPPROVED BY: G. J. [Signature]DATE: 3/12/92DATE: 3/12/92

SPL ICP DUPLICATES DATA

SAMPLE ID	TEST CODE	#1	#2	RPD (%)	QC LIMITS	DILUTION
3099 1c	Ag	NP	NP	N/A	20	1
	As	↓	↓	↓	20	
	Pb	↓	↓	↓	20	
	Ba	0.273	0.273	0	20	
	Se	NP	NP	N/A	20	
	Cl	↓	↓	↓	20	
↓	Ce	0.024	0.023	↓	20	↓
					20	
					20	
					20	

$$\text{RELATIVE PERCENT DIFFERENCE} = \text{RPD} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPL ICP MATRIX SPIKE DATA

SAMPLE ID	TEST CODE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	% RPD
3099 1c	Ag	NP	0.050	0.050	0.050	100.0	100.0	0	75-125	20
	As	↓	2.00	1.85	1.84	92.5	92.0	1	75-125	20
	Pb	↓	0.500	0.450	0.457	90.0	91.4	2	75-125	20
	Ba	0.273	2.00	2.20	2.18	96.4	95.4	4	75-125	20
	Se	NP	2.00	2.12	2.11	106.0	105.5	0	75-125	20
	Cl	↓	0.050	0.056	0.053	112.0	116.0	4	75-125	20
↓	Ce	0.024	0.200	0.201	0.201	88.5 100.5	88.5 100.5	0	75-125	20
									75-125	20
									75-125	20
									75-125	20

$$\% \text{ RECOVERY} = \frac{(\text{SPIKED SAMPLE RESULT} - \text{SAMPLE RESULT})}{(\text{SPIKE ADDED})} \times 100$$

REVIEWED BY: Melissa MarianiAPPROVED BY: Cynthia SchenkerDATE: 3/12/92DATE: 3/12/92

SPL ICP DUPLICATES DATA

SAMPLE ID	TEST CODE	#1	#2	RPD (%)	QC LIMITS	DILUTION
3096 1d	Ag	NP	NP	N/A	20	1
	As	↓	↓	↓	20	
	Pb	0.302	0.304	2	20	
	Se	NP	NP	N/A	20	
Y	Cd	0.003	0.003	0	20	Y
					20	
					20	
					20	
					20	
					20	

$$\text{RELATIVE PERCENT DIFFERENCE} = \text{RPD} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPL ICP MATRIX SPIKE DATA

SAMPLE ID	TEST CODE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	% RE
3096 1d	Ag	NP	0.050	0.052	0.048	104.0	96.0	8	75-125	20
	As	↓	2.00	1.91	1.97	95.5	98.5	3	75-125	20
	Pb	0.310	0.50	0.772	0.775	92.4	93.0	0	75-125	20
	Se	NP	2.00	2.06	2.10	103.0	105.0	2	75-125	20
Y	Cd	0.003	0.050	0.068	0.067	120.0	118.0	1	75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20

$$\% \text{ RECOVERY} = \frac{(\text{SPIKED SAMPLE RESULT} - \text{SAMPLE RESULT})}{(\text{SPIKE ADDED})} \times 100$$

REVIEWED BY: Meaga MariamAPPROVED BY: Cynthia ShuenDATE: 3/12/92DATE: 3/12/92

FILE: A0311MATRIX: WATER (P3010)ANALYSIS DATE: 3/11/92SPL ICP DUPLICATES DATA

SAMPLE ID	TEST CODE	#1	#2	RPD (%)	QC LIMITS	DILUTION
2394 2H	Ag	nd	nd	N/A	20	1
↓	BA	↓	↓	↓	20	↓
↓	Cl	↓	↓	↓	20	↓
↓	Cr	↓	↓	↓	20	↓
					20	
					20	
					20	
					20	
					20	
					20	

$$\text{RELATIVE PERCENT DIFFERENCE} = \text{RPD} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPL ICP MATRIX SPIKE DATA

SAMPLE ID	TEST CODE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	% RP
2394 2H	Ag	nd	0.050	0.053	0.043	106.0	96.0	10	75-125	20
↓	BA	↓	0.500	0.509	0.475	101.8	95.0	7	75-125	20
↓	Cl	↓	0.050	0.046	0.043	92.0	86.0	7	75-125	20
↓	Cr	↓	0.200	0.199	0.186	99.5	93.0	7	75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20

$$\% \text{ RECOVERY} = \frac{(\text{SPIKED SAMPLE RESULT} - \text{SAMPLE RESULT})}{(\text{SPIKE ADDED})} \times 100$$

REVIEWED BY: Melissa MarionAPPROVED BY: Cynthia SchinnerDATE: 3/12/92DATE: 3/12/92

FILE: A0311MATRIX: WATERANALYSIS DATE: 3/11/92

SPL ICP DUPLICATES DATA

SAMPLE ID	TEST CODE	#1	#2	RPD (%)	QC LIMITS	DILUTION
3123 1d	Pb	ND	ND	N/A	20	1
	Ba	0.055	0.054	2	20	
	Cu	ND	ND	N/A	20	
	Al	0.533	0.611	14	20	
	Fe	0.267	0.260	3	20	
✓	Zn	0.042	0.050	17	20	✓
					20	
					20	
					20	
					20	

$$\text{RELATIVE PERCENT DIFFERENCE} = \text{RPD} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPL ICP MATRIX SPIKE DATA

SAMPLE ID	TEST CODE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	% RP
3123 1d	Pb	ND	0.500	0.455	0.439	91.0	87.8	4	75-125	20
	Ba	0.055	2.00	1.85	1.84	89.8	89.2	1	75-125	20
	Cu	ND	0.200	0.176	0.172	88.0	86.0	2	75-125	20
	Al	0.533	2.00	2.99	2.54	122.8	100.4	16	75-125	20
	Fe	0.267	1.00	1.41	1.36	114.3	109.3	4	75-125	20
✓	Zn	0.042	0.500	0.471	0.457	85.8	83.0	3	75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20

$$\% \text{ RECOVERY} = \frac{(\text{SPIKED SAMPLE RESULT} - \text{SAMPLE RESULT})}{(\text{SPIKE ADDED})} \times 100$$

REVIEWED BY: Melba MariamAPPROVED BY: Cynthia SilvestriDATE: 3/12/92DATE: 3/12/92

SPL ICP (METHOD 6010/200.7) STANDARD QC FORM

DATE: 3/9/92

TIME: 1146

FILE: A0329

ANALYST: PR

SAMPLES IN SET: 38 39 CS

UNITS: mg/L

SAMPLE #'s IN SET: 3045 1E - 5E 3053 1A, 2A 3037 1B 3058 1B
2466 1A 2470-1C 3048 4C 2479 1A - 9A 2490 1A 2454 1C 2493 3C
2483 1A, 2A 2485 1A, 2A 2493 4C, 7d 3107 1d - 8d 3096 1B 10

TEST CODE	IDL	BLANK		STANDARD	
		EM	CONC	EM	CONC
BA	0.006	0.000	0.00	4.35	10.00
C	0.02	0.004		3.69	
ZN	0.02	0.024		4.89	
Ag	0.02	-0.001		3.33	
PB	0.2	0.016		0.992	
FL	0.03	0.003		4.61	
Mg	0.2	0.000		0.855	
NA	0.2	0.050	Y	2.81	Y

REVIEWED BY: Melissa Mariani

APPROVED BY: Cynthia Schmeider

DATE: 3/10/92

DATE: 3/10/92

SPL ICP CALIBRATION VERIFICATION

ID	TEST CODE	TRUE CONC.	FOUND CONC.	% RECOVERY	QC LIMITS	
					UPPER	LOWER
Icv	BA	5.00	5.22	104.4	110.2	90.2
	Cd	5.52	5.54	100.4		
	Zn	5.00	5.01	100.2		
	Ag		5.46	109.2		
	Pb		5.13	102.6		
	Fe		5.33	106.6		
	Mg		4.90	98.0		
✓	NA	✓	5.03	100.6		
CCV1	BA	5.00	5.28	105.6		
	Cd	5.52	5.61	101.6		
	Zn	5.00	5.08	101.6		
	Ag		5.49	109.8		
	Pb		5.19	103.8		
	Fe		5.39	107.8		
	Mg		4.94	98.8		
✓	NA	✓	5.06	101.2		
CCV2	BA	5.00	5.26	105.2		
	Cd	5.52	5.60	101.4		
	Zn	5.00	5.08	101.6		
	Ag		5.45	109.0		
	Pb		5.16	103.2		
	Fe		5.38	107.6		
✓	Mg	✓	4.93	98.6	✓	✓

CALCULATION: % RECOVERY = $\frac{(\text{FOUND CONC.})}{(\text{TRUE CONC.})} \times 100$

REVIEWED BY: Meaga Mariani

APPROVED BY: Cynthia Schmeier

DATE: 3/10/92

DATE: 3/10/92

SPL ICP CALIBRATION VERIFICATION

ID	TEST CODE	TRUE CONC.	FOUND CONC.	% RECOVERY	QC LIMITS	
					UPPER	LOWER
CCV2	NA	5.00	5.17	103.4	110.8	90.2
CCV3	BA	5.00	5.22 5.27	104.4 105.4		
	Ca	5.52	5.60	101.4		
	Zn	5.00	5.08	101.6		
	Ag		5.41	108.2		
	Pb		5.20	104.0		
	Fe		5.37	107.4		
	Mg		4.97	99.4		
↓	NA	↓	5.35	107.0		
CCV4	BA	5.00	5.11	102.2		
↓	Ca	5.52	5.56	100.7		
CCV5	BA	5.00	4.92	98.4		
↓	Ca	5.52	5.49	99.5		
	NA	5.00	5.10	102.0		
↓	Mg	4.83 4.83	4.83	99.9 96.6		
CCV6	BA	5.00	4.98	99.6		
	Ca	5.52	5.44	98.6		
	Zn	5.00	5.01	100.2		
	Ag		5.37	107.4		
	Pb		5.16	103.2		
	Fe		5.20	104.0		
	Mg		4.78	95.6		
↓	NA	↓	4.91	98.2	↓	↓

CALCULATION: % RECOVERY = $\frac{(\text{FOUND CONC.})}{(\text{TRUE CONC.})} \times 100$

REVIEWED BY: Marya MeriamAPPROVED BY: Agnes SchuenerDATE: 3/10/92DATE: 3/10/92

SPL ICP CALIBRATION VERIFICATION

ID	TEST CODE	TRUE CONC.	FOUND CONC.	% RECOVERY	QC LIMITS	
					UPPER	LOWER
CCV7	BA	5.00	4.99	99.8	110.2	90.2
	Ce	5.52	5.48	99.3		
	Zn	5.00	5.06	101.2		
	Ag		5.27 5.24 ₂₀	105.4		
	Pb		5.18	103.6		
	Fe		5.23	104.6		
	Mg		4.82	96.4		
Y	NA	Y	4.89	97.8		
CCV8	BA	5.00	4.86	97.2		
↓	Ce	5.52	5.40	97.8		
CCV9	BA	5.00	4.86	97.2		
↓	Ce	5.52	5.40	97.8	Y	Y
PB 3/5	BA	0.0	ND	N/A	0.006	-0.006
	Ce				0.02	-0.02
	Zn				0.02	-0.02
	Ag				0.02	-0.02
	Pb				0.2	-0.2
	Fe				0.03	-0.03
	Mg				0.2	-0.2
Y	NA	Y	Y	Y	0.2	-0.2

CALCULATION: % RECOVERY = $\frac{(\text{FOUND CONC.})}{(\text{TRUE CONC.})} \times 100$

REVIEWED BY: Melissa MartinAPPROVED BY: Cynthia SchreinerDATE: 3/10/92DATE: 3/10/92

SPL ICP CALIBRATION VERIFICATION

[illegible]

CALCULATION: % RECOVERY = $\frac{(\text{FOUND CONC.})}{(\text{TRUE CONC.})} \times 100$

REVIEWED BY: Melba Mayiam

APPROVED BY: [Signature]

DATE: 3/10/99

DATE: 3/10/92

SPL ICP DUPLICATES DATA

SAMPLE ID	TEST CODE	#1	#2	RPD (%)	QC LIMITS	DILUTION
3045 SE	BA	0.063	0.071	12	20	1
	CA	ND	ND	N/A	20	
	Zn				20	
	Ag				20	
	PB				20	
	Fe	✓	✓	✓	20	
	Mg	17.4	19.0	9	20	
✓	NA	15.2	16.7	9	20	✓
					20	
					20	

$$\text{RELATIVE PERCENT DIFFERENCE} = \text{RPD} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPL ICP MATRIX SPIKE DATA

SAMPLE ID	TEST CODE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	% R.
3045 SE	BA	0.063	2.00	2.06	2.08	99.8	100.8	1	75-125	20
	CA	ND	0.200	0.187	0.199	93.5	99.5	6	75-125	20
	Zn		0.500	0.460	0.472	92.0	94.4	3	75-125	20
	Ag		0.050	0.055	0.062	110.0	124.0	12	75-125	20
	PB		0.500	0.458	0.505	91.6	101.0	10	75-125	20
	Fe	✓	1.00	0.939	0.986	93.9	98.6	5	75-125	20
	Mg	17.4	10.0	26.4	26.9	90.0	95.0	2	75-125	20
✓	NA	15.2	✓	23.7	24.1	85.0	99.0	2	75-125	20
									75-125	20
									75-125	20

$$\% \text{ RECOVERY} = \frac{(\text{SPIKED SAMPLE RESULT} - \text{SAMPLE RESULT})}{(\text{SPIKE ADDED})} \times 100$$

REVIEWED BY: Meaga MarionAPPROVED BY: Amy Sue SchinnerDATE: 3/10/92DATE: 3/10/92

FILE: A0309MATRIX: TCLP- OTHERANALYSIS DATE: 3/9/92SPL ICP DUPLICATES DATA

SAMPLE ID	TEST CODE	#1	#2	RPD (%)	QC LIMITS	DILUTION
2470 1c	BA	0.235	0.236	0	20	1
4	Ca	NP	NP	N/A	20	1
					20	
					20	
					20	
					20	
					20	
					20	
					20	

$$\text{RELATIVE PERCENT DIFFERENCE} = \text{RPD} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPL ICP MATRIX SPIKE DATA

SAMPLE ID	TEST CODE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	% RPD
2470 1c	BA	0.235	2.00	2.00	2.03	88.2	89.8	1	75-125	20
4	Ca	NP	0.200	0.162	0.166	81.0	83.0	2	75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20
									75-125	20

$$\% \text{ RECOVERY} = \frac{(\text{SPIKED SAMPLE RESULT} - \text{SAMPLE RESULT})}{(\text{SPIKE ADDED})} \times 100$$

REVIEWED BY: Megha MarianiAPPROVED BY: Arthur SchermerDATE: 3/10/92DATE: 3/10/92

SPL AA QC FORM

TEST CODE: CDDATE: 3/13/92ANALYST: JmMETHOD: FLAATIME: 12:09DETECTION LIMIT: 0.03# SAMPLES IN SET: 6UNITS: mg/LSAMPLE #'S IN SET: 02447-5C ; 02493-1C, 2C, 5C, 6C ; 03049-1C
(03099-1C QC only)

STANDARDS	EM, %T, ABS.	ACTUAL CONC.	THEORET. CONC.	%RECOVERY	UPPER LIMIT	LOWER LIMIT
BLANK	-0.010	0.000	0.000	—	—	—
#1	0.046	0.200	0.200	100.0	105%	95%
#2	0.115	0.499	0.500	99.8	↓	↓
#3	0.215	0.984	1.000	98.4	↓	↓
#4						
#5						

CONTINUING CALIBRATION

ID	THEORETICAL	ACTUAL	% RECOVERY	UPPER LIMIT	LOWER LIMIT
ICV	0.800	0.814	101.8	110%	90%
LCS	1.000	0.928	92.8	120%	80%
CCV	0.500	0.520	104.0	110%	90%
CCV ₂	↓	0.515	103.0	↓	↓
PB 3 ₁₁	0	NA	NA	0.03	-0.03
PB 3 ₁₁₀	↓	↓	↓	↓	↓
PB 3 ₁₁₀ EXT #2	↓	↓	↓	↓	↓

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL})}{(\text{THEORETICAL})} \times 100$$
REVIEWED BY: Meera MarianiAPPROVED BY: Arthur SchmeierDATE: 3/13/92DATE: 3/13/92

SPL AA QC FORM

TEST CODE: CdDATE: 3/9/92ANALYST: JmMETHOD: FLAATIME: 15:50DETECTION LIMIT: 0.03# SAMPLES IN SET: 17UNITS: mg/LSAMPLE #'S IN SET: 02461-1A; 02483-1A, 2A; 02485-1A, 2A; 02490-1A; 02454-1C;
02470-1C; 02481-1C; 02493-3C, 4C, 7D; 03045-1E-5E

STANDARDS	EM, %T, ABS.	ACTUAL CONC.	THEORET. CONC.	%RECOVERY	UPPER LIMIT	LOWER LIMIT
BLANK	-0.071	0.000	0.000	—	—	—
#1	0.047	0.300	0.300	100.0	105%	95%
#2	0.108	0.493	0.500	98.6	↓	↓
#3	0.207	0.986	1.000	98.6	↓	↓
#4						
#5						

CONTINUING CALIBRATION

ID	THEORETICAL	ACTUAL	% RECOVERY	UPPER LIMIT	LOWER LIMIT
ICV	0.800	0.782	97.8	110%	90%
LCS	1.000	0.937	93.7	120%	80%
CC1	0.500	0.510	102.0	110%	90%
CC1/2	↓	0.515	103.0	↓	↓
CC1/3	↓	0.496	99.2	↓	↓
CC1/4	↓	0.511	102.2	↓	↓
CC1/5	↓	0.512	102.4	↓	↓
PB 3/5	0	N/D	NA	0.03	-0.03
PB 3/6	↓	↓	↓	↓	↓
PB 3/5	↓	↓	↓	↓	↓

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL})}{(\text{THEORETICAL})} \times 100$$
REVIEWED BY: Meag MarlamAPPROVED BY: Cynthia SchmeierDATE: 3/10/92DATE: 3/10/92

TEST: CdMATRIX: TOP- soilANALYSIS DATE: 3/9/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
02461-1A	ND	ND	NA	20	1
02490-1A	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPD
02461-1A	ND	0.050	0.049	0.049	98.0	98.0	0	75 - 125	20
02490-1A	ND	↓	0.055	0.056	110.0	112.0	2	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Meaza MaxiamAPPROVED BY: Ag. Thua SchreinerDATE: 3/10/92DATE: 3/10/92

TEST: CdMATRIX: TRUP-OtherANALYSIS DATE: 3/9/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
02481-1C	ND	ND	NA	20	1
02470-1C	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPD
02481-1C	ND	0.050	0.049	0.056	98.0	112.0	13	75 - 125	20
02470-1C	↓	↓	0.049	0.048	98.0	96.0	2	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Meagan MaxiamAPPROVED BY: Cynthia SchmeierDATE: 3/10/92DATE: 3/10/92

TEST: CdMATRIX: ICLP- liquidANALYSIS DATE: 3/9/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
02493-3C	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPD
02493-3C	ND	0.050	0.053	0.050	106.0	100.0	6	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Meagan MartamAPPROVED BY: Cynthia SchreinerDATE: 3/10/92DATE: 3/10/92

TEST: CdMATRIX: waterANALYSIS DATE: 3/9/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
03045-5E	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	% RPD
03045-5E	ND	0.050	0.049	0.055	98.0	110.0	12	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Melinda MarianiAPPROVED BY: Agustine ShuenesDATE: 3/10/92DATE: 3/10/92

SPL AA QC FORM

TEST CODE: HgDATE: 3/10/92ANALYST: JmMETHOD: CVAATIME: 4.53DETECTION LIMIT: 0.6# SAMPLES IN SET: 21UNITS: ug/LSAMPLE #'S IN SET: 02483-1A, 2A ; 02485-1A, 2A ; 02493-1C-6C, 7D ;
03084-7A, 8A ; 03097-1A-6A ; 03098-7A, 8A

STANDARDS	EM, %T, ABS.	ACTUAL CONC.	THEORET. CONC.	%RECOVERY	UPPER LIMIT	LOWER LIMIT
BLANK	0.003	0.00	0.00	—	—	—
#1	0.017	0.50	0.50	100.0	105%	95%
#2	0.034	1.00	1.00	100.0	↓	↓
#3	0.145	4.95	5.00	99.0	↓	↓
#4	0.285	9.94	10.00	99.4	↓	↓
#5						

CONTINUING CALIBRATION

ID	THEORETICAL	ACTUAL	% RECOVERY	UPPER LIMIT	LOWER LIMIT
ICV	2.50	2.70	108.0	120%	80%
LCS	2.00	2.17	108.5	↓	↓
CCV ₁	2.50	2.65	106.0	↓	↓
CCV ₂	↓	2.53	101.2	↓	↓
CCV ₃	↓	2.51	100.4	↓	↓
CCV ₄	↓	2.49	99.6	↓	↓
CCV ₅	↓	2.51	100.4	↓	↓
PB _{unlabeled}	0	ND	NA	0.6	-0.6
PB _{EXT #1}	↓	↓	↓	↓	↓

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL})}{(\text{THEORETICAL})} \times 100$$

REVIEWED BY: Meara MarianiAPPROVED BY: Cynthia SchmechelDATE: 3/10/92DATE: 3/10/92

TEST: HgMATRIX: Tcup- soilANALYSIS DATE: 3/10/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
02493-1C	ND	ND	NA	20	4
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPD
02493-1C	ND	2.00	2.11	2.16	105.5	108.0	2	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Mearza MariamDATE: 3/10/92APPROVED BY: Arthur SchreinerDATE: 3/10/92

TEST: HgMATRIX: 7CUP-liquidANALYSIS DATE: 3/10/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
02443-3C	ND	ND	NA	20	4
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPD
02443-3C	ND	2.00	2.20	2.05	110.0	102.5	7	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Melissa MartinAPPROVED BY: Cy. Alvin SchreinerDATE: 3/10/92DATE: 3/10/92

SPL AA QC FORM

TEST CODE: PbDATE: 3/13/92ANALYST: JmMETHOD: FLAATIME: 11:15DETECTION LIMIT: 0.3# SAMPLES IN SET: 6UNITS: mg/LSAMPLE #'S IN SET: 02447-5C, 02493-1C, 2C, 5C, 6C; 03049-1C

STANDARDS	EM, %T, ABS.	ACTUAL CONC.	THEORET. CONC.	%RECOVERY	UPPER LIMIT	LOWER LIMIT
BLANK	0.051	0.00	0.00	—	—	—
#1	0.010	0.50	0.50	100.0	105%	95%
#2	0.017	0.98	1.00	98.0	↓	↓
#3	0.033	1.98	2.00	99.0	↓	↓
#4						
#5						

CONTINUING CALIBRATION

ID	THEORETICAL	ACTUAL	% RECOVERY	UPPER LIMIT	LOWER LIMIT
ICV	1.00	1.01	101.0	110%	90%
LCS	↓	0.97	97.0	120%	80%
CCV	↓	1.03	103.0	110%	90%
CV _{1/2}	↓	0.98	98.0	↓	↓
PB 3/11	0	ND	NA	0.3	-0.3
PB 3/10	↓	↓	↓	↓	↓
PB 3/10 EXT #2	↓	↓	↓	↓	↓

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL})}{(\text{THEORETICAL})} \times 100$$
REVIEWED BY: Neaga MaramAPPROVED BY: Cynthia SchreinerDATE: 3/13/92DATE: 3/13/92

TEST: PbMATRIX: Tcp. soilANALYSIS DATE: 3/13/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
02447-5C	ND	ND	NA	20	1
03099-1C	↓	↓	↓	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPD
02447-5C	ND	0.50	0.44	0.47	88.0	94.0	7	75 - 125	20
03099-1C	↓	↓	0.49	0.48	98.0	96.0	2	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Meagan MarianiAPPROVED BY: Cynthia SchreierDATE: 3/13/92DATE: 3/13/92

SPL AA QC FORM

TEST CODE: PbDATE: 3/9/92ANALYST: JmMETHOD: FLAATIME: 14:15DETECTION LIMIT: 0.3# SAMPLES IN SET: 27UNITS: mg/LSAMPLE #'S IN SET: 02461-1A; 02483-1A,2A; 02485-1A,2A; 02490-1A; 03023-4A
03025-1A; 02454-1C; 02470-1C; 02481-1C; 02493-3C,4C,7A; 03020-1C-7C; 03001-1
03045-1E-5E

STANDARDS	EM, %T, ABS.	ACTUAL CONC.	THEORET. CONC.	%RECOVERY	UPPER LIMIT	LOWER LIMIT
BLANK	0.002	0.00	0.00	—	—	—
#1	0.009	0.50	0.50	100.0	105%	95%
#2	0.017	0.98	1.00	98.0	↓	↓
#3	0.035	2.01	2.00	100.5	↓	↓
#4						
#5						

CONTINUING CALIBRATION

ID	THEORETICAL	ACTUAL	% RECOVERY	UPPER LIMIT	LOWER LIMIT
ICV	1.00	0.97	97.0	110%	90%
LCS		0.97	97.0	120%	80%
CCV ₁		0.93	93.0	110%	90%
CCV ₂		0.92	92.0		
CCV ₃		0.90	90.0		
CCV ₄		0.96	96.0		
CCV ₅		0.91	91.0		
CCV ₆	↓	0.92	92.0	↓	↓
PB 3/5	0	ND	NA	0.3	-0.3
PB 3/6	↓	↓	↓	↓	↓
PB 3/3	↓	↓	↓	↓	↓

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL})}{(\text{THEORETICAL})} \times 100$$

REVIEWED BY: Meagan MarianiAPPROVED BY: Agatha SchenckDATE: 3/10/92DATE: 3/10/92

TEST: PbMATRIX: ICUP- soilANALYSIS DATE: 3/9/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
02461-1A	ND	ND	NA	20	1
02490-1A	0.32 NA gm	0.34 NA gm	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPD
02461-1A	ND	0.50	0.51	0.46	102.0	92.0	10	75 - 125	20
02490-1A	0.32 NA gm	↓	0.80	0.81	96.0	98.0	1	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Meaga MaxiamAPPROVED BY: Cynthia ShreinerDATE: 3/10/92DATE: 3/10/92

TEST: PbMATRIX: ICUP- OtherANALYSIS DATE: 3/9/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
02481-1C	ND	ND	NA	20	1
02470-1C	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPE
02481-1C	ND	0.50	0.53	0.52	106.0	104.0	2	75 - 125	20
02470-1C	ND	↓	0.44	0.47	88.0	94.0	7	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Meagan MaxiamAPPROVED BY: Cynthia SchreinerDATE: 3/10/92DATE: 3/10/92

TEST: PbMATRIX: ICP-liquidANALYSIS DATE: 3/9/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
02493-3C	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPD
02493-3C	ND	0.50	0.47	0.43	94.0	86.0	9	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Melissa MaxiamAPPROVED BY: Capt. Thad SchreinerDATE: 3/10/92DATE: 3/10/92

TEST: PbMATRIX: waterANALYSIS DATE: 3/9/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
03045-5E	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RPI
03045-5E	ND	0.50	0.41	0.41	82.0	82.0	0	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Melissa MarjamAPPROVED BY: Cynthia SchreinerDATE: 3/10/92DATE: 3/10/92

03/2B

SPL AA QC FORM

EST CODE: SEDATE: 3/12/98ANALYST: WFLMETHOD: GFAATIME: 14:13DETECTION LIMIT: 6SAMPLES IN SET: 18UNITS: ug/L

SAMPLE = 'S IN SET: 03074-1c; 03001-1A; 02484-1A-4A; 5B; 03045-1E-5E;
 02447-5c; 02493-1c, 2c, 5c, 6c; 03049-1c.

STANDARDS	EM, %T, ABS.	ACTUAL CONC.	THEORET. CONC.	%RECOVERY	UPPER LIMIT	LOWER LIMIT
BLANK	0.001	0.0	0.0	NA	—	—
#1	0.096	25.0	25.0	100.0%	105.0%	95.0%
#2	0.188	49.8	50.0	99.6%	↓	↓
#3	0.372	99.8	100.0	99.8%	↓	↓
#4						
#5						

CONTINUING CALIBRATION

ID	THEORETICAL	ACTUAL	% RECOVERY	UPPER LIMIT	LOWER LIMIT
ICV	75.0	74.9	99.9%	110.0%	90.0%
LCS	30.0	34.5	115.0%	120.0%	80.0%
CCV ₁	50.0	52.9	105.8%	110.0%	90.0%
CCV ₂		50.0	100.0%		
CCV ₃		49.2	98.4%		
CCV ₄		49.5	99.0%		
CCV ₅		47.9	95.8%		
CCV ₆					
PB3/6	0	ND	NA	+6	-6
PB3/11	0	ND	NA	+6	-6

% RECOVERY = $\frac{(\text{ACTUAL})}{(\text{THEORETICAL})} \times 100$

REVIEWED BY: Meagan MarianiAPPROVED BY: Cynthia SchusterDATE: 3/13/98DATE: 3/13/98

TEST:

SO

MATRIX:

Water

ANALYSIS DATE:

3/13/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
03045-1E	ND	ND	N/A	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%RP
03045-1E	ND	30.0	28.4	30.9	94.7%	103.0%	8	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY:

Meagan Mariani

APPROVED BY:

Cynthia Schinnerer

DATE:

3/13/92

DATE:

3/13/92

TEST: SCMATRIX: TCIP-soilANALYSIS DATE: 3/13/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
02447-5c	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	% REC
02447-5c	ND	30.0	18.8	16.7	62.7%	55.7%	12	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
* - Matrix Interference								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Melissa M. M. M.DATE: 3/13/92APPROVED BY: C. J. H. S. H. S.DATE: 3/13/92

0313B

SPL AA QC FORM

TEST CODE: SeDATE: 3/13/92ANALYST: WFLMETHOD: GFAATIME: 10:22DETECTION LIMIT: 6SAMPLES IN SET: 20UNITS: ug/LSAMPLE #'S IN SET: 03168-2c, 3B6c, 7c, 11c, 13c; 02463-1A; 02470-1c;
02481-1c; 02493-3c, 4c, 7D; 03107-1B-8D

STANDARDS	EM, %T, ABS.	ACTUAL CONC.	THEORET. CONC.	%RECOVERY	UPPER LIMIT	LOWER LIMIT
BLANK	0.001	0.0	0.0	NA	—	—
#1	0.062	25.0	25.0	100.0%	105.0%	95.0%
#2	0.144	50.7	50.0	101.4%	↓	↓
#3	0.267	98.6	100.0	98.6%	↓	↓
#4						
#5						

CONTINUING CALIBRATION

ID	THEORETICAL	ACTUAL	% RECOVERY	UPPER LIMIT	LOWER LIMIT
ICV	75.0	76.2	101.6%	110.0%	90.0%
LCS	30.0	29.8	99.3%	120.0%	80.0%
CCV ₁	50.0	50.5	101.0%	110.0%	90.0%
CCV ₂		48.2	96.4%		
CCV ₃		47.5	95.0%		
CCV ₄		49.6	99.2%		
CCV ₅		49.7	99.4%		
CCV ₆	↓	50.5	101.0%	↓	↓
PB3111	0	ND	NA	+6	-6
PB314	0	ND	NA	+6	-6

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL})}{(\text{THEORETICAL})} \times 100$$

REVIEWED BY: Marga MarianiAPPROVED BY: Cynthia SchmeierDATE: 3/16/92DATE: 3/16/92

TEST: SeMATRIX: TCLP-otherANALYSIS DATE: 3/13/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
02470-1c	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	% RECOVERY
02470-1c	ND	30.0	24.7	26.3	82.3%	87.7%	6	75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20
								75 - 125	20

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY: Meaga MariamDATE: 3/16/92APPROVED BY: Cynthia SchmeiserDATE: 3/16/92

TEST:

Se

MATRIX:

Soil

ANALYSIS DATE:

3/13/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
03168-2c	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%R
03168-2c	ND	30.0	28.3	28.6	94.3%	95.3%	1	75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY:

Meagan Mariani

APPROVED BY:

Capt. Paul Shiner

DATE:

3/16/92

DATE:

3/16/92

TEST:

AS

MATRIX:

TCLP-Filtered

ANALYSIS DATE

3/13/92

SPL AA DUPLICATE AND SPIKE DATA

DUPLICATES	#1	#2	RPD (%)	RPD QC LIMIT	DILUTION
02493-3c	ND	ND	NA	20	1
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	
				20	

$$\text{RELATIVE PERCENT DIFFERENCE (RPD)} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

SPIKED SAMPLE	SAMPLE CONC.	SPIKE ADDED	MS CONC	MSD CONC	MS % REC	MSD % REC	RPD (%)	QC LIMITS % REC	%R
02493-3c	ND	30.0	25.3	26.0	84.3%	86.7%	3	75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2
								75 - 125	2

$$\% \text{ RECOVERY} = \frac{(\text{ACTUAL} - \text{ORIGINAL})}{(\text{AMT. ADDED})} \times 100$$

REVIEWED BY:

Meagan Mariani

APPROVED BY:

Cynthia Stuenkel

DATE:

3/16/92

DATE:

3/16/92



**** SPL QUALITY CONTROL REPORT ****
TOTAL PETROLEUM HYDROCARBONS (TPH)

SPL sample Id: BLANK
Matrix: WATER

Reported on: 03/18/92
Analyzed on: 03/03/92

This sample was randomly selected for use in the SPL quality control program. One in ten samples is fortified with a known concentration of the substance being analyzed and one in ten samples is analyzed in duplicate. The result are as follows:

-- SPIKE ANALYSIS --

Sample Id	Blank Value	Spike Added mg/L	Original Sample Concentration mg/L	MS Concentration mg/L	MS % Rec
BLANK	ND	361	ND	358	99

-- SPIKE DUPLICATE ANALYSIS --

Sample Id	Spike Added mg/L	MSD Concentration mg/L	MSD % Rec	% RPD
BLANK	361	338	94	6

SPL, Incorporated

Cynthia Schreiner, QC Officer



**** SPL QUALITY CONTROL REPORT ****
TOTAL PETROLEUM HYDROCARBONS (TPH)

SPL sample Id: F202488-06B

Reported on: 03/18/92

Matrix: SOIL

Analyzed on: 03/02/92

This sample was randomly selected for use in the SPL quality control program. One in ten samples is fortified with a known concentration of the substance being analyzed and one in ten samples is analyzed in duplicate. The result are as follows:

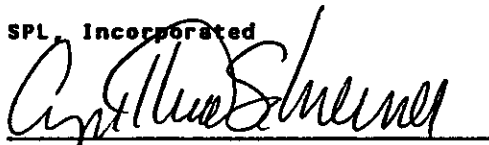
-- SPIKE ANALYSIS --

Sample Id	Blank Value	Spike Added mg/L	Original Sample Concentration mg/Kg	MS Concentration mg/Kg	MS % Rec
F202488-06B	ND	361	ND	343	95

-- SPIKE DUPLICATE ANALYSIS --

Sample Id	Spike Added mg/L	MSD Concentration mg/Kg	MSD % Rec	% RPD
F202488-06B	361	350	97	2

SPL, Incorporated


Cynthia Schreiner, QC Officer



8880 Interchange Drive, Houston, Texas 77054 713/660-0901

Wet Chemistry QA/QC Validation Report

Test Code PHDate 03-03-92Analyst DSEMethod 150.1Time 8:00 AMMatrix LIQUID# Of Samples in Set 20Detection Limit NONE

Sample #'s in Set	203011 - OIC	203014 - OIC	203017 - OIC	202483 - OIC, 2C	Units <u>PH UNITS</u>
	203012 - OIC	203015 - OIC	203018 - OIC	202485 - OIC, 2C	
	203013 - OIC	203016 - OIC	203019 - OIA, OSE, 7A, 10A, 10B	202493 - O3B, O4B, O7B	

Standards	EM, %T, ABS.	Actual Concentration	Theoretical Concentration	% Recovery	Upper Limit	Lower Limit
Blank <u>Buffers</u>						
#1 4.00		4.00	4.00	100.0	4.29	3.87
#2 7.00		6.97	7.00	99.6	7.07	6.95
#3 10.00		10.00	10.00	100.0	10.12	9.94
#4		TEMP: 21°C			SLOPE: 100.5	
Check Std.	CALIBRATED with 4.00 & 10.00 Buffers					

Duplicate	#1	#2	RPD (%)	Upper Limit	Lower Limit	Dilution
203012 - OIC	6.94	6.94	0	1.20	0.90	
202485 - OIC	7.09	7.09	0	1.20	0.90	
202493 - O7B	7.13	7.13	0	1.20	0.90	
203019 - OIA	7.50	7.50	0	1.20	0.90	
203019 - 10A	7.26	7.26	0	1.20	0.90	

Spike Sample	Concentration Before Spike	Amount Added	Concentration After Spike	After - Before	% Recovery	Upper Limit	Lower Limit
<u>N/A</u>							

Spike Recovery Calculation

$$\text{Recovery} = \frac{(\text{Actual} - \text{Original})}{\text{Amount Added}} \times 100$$

viewed By Richard Church

3/4/92

Relative Percent Difference Calculation

$$\text{RPD} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

Approved By Capt. [Signature]

1/1/00

F2.02.493

Page 33 of 2

Toxcon Engineering Company, Inc.

3334 Richmond Ave., #200

Houston, Texas 77098

(713) 520-7667

Analysis Request and Chain of Custody Record

Project No.		Client/Project Name		Project Location		Analysis Requested		Laboratory Remarks	
504867.00		Baker Oil Tools (BOT)		2800 W. Maryland Hobbs, N.M.					
Field Sample No./ Identification	Date and Time	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	Analysis Requested	Laboratory Remarks			
B9:345-36	2/26/92 14:50	16oz. WMB	Soil	ice	TPH (418.1) Volatiles (8240)				
MW1:335-35	2/27/92 7:20	↓	↓	↓					
MW1:021792	2/27/92 18:00	1L glass	water	Hcl ice	TPH (418.1)				
↓	↓	8oz. glass	↓	ice	pH				
↓	↓	3 VOAs	↓	Hcl ice	Volatiles (8240)				
↓	↓	1L glass	↓	ice	TECP metals (6010/7000/1311)				
MW2:022892	2/28/92 12:10	1L glass	water	Hcl ice	TPH (418.1)				
↓	↓	8oz. glass	↓	ice	pH				
↓	↓	3 VOAs	↓	Hcl ice	Volatiles (8240)				
↓	↓	1L glass	↓	ice	TECP metals (6010/7000/1311)				
Relinquished by: (Signature)		Relinquished by: (Signature)		Relinquished by: (Signature)		Relinquished by: (Signature)		Relinquished by: (Signature)	
Simon Haddo-Search		Rogers Pohlke		Rogers Pohlke		Rogers Pohlke		Rogers Pohlke	
Affiliation		Affiliation		Affiliation		Affiliation		Affiliation	
Simon Haddo-Search		Rogers Pohlke		Rogers Pohlke		Rogers Pohlke		Rogers Pohlke	
Date: 2/29/92		Date: 2/29/92		Date: 2/29/92		Date: 2/29/92		Date: 2/29/92	
Time: 11:30		Time: 11:30		Time: 11:30		Time: 11:30		Time: 11:30	
Laboratory No.		Laboratory No.		Laboratory No.		Laboratory No.		Laboratory No.	
21		21		21		21		21	
Seal #		Seal #		Seal #		Seal #		Seal #	

SAMPLE REMARKS:

* send results to Toxcon address above

Seal #

Rogers Pohlke 40 Toxcon

21

2-28-92 11:30 AM

Toxcon Engineering Company, Inc.

**33334 Richmond Ave., #200
Houston, Texas 77098
(713) 520-7667**

Project No.		Client/Project Name		Project Location				
504867.00		Baker Oil Tools / Hobbs, N.M., (BOT)		2800 W. Maryland Hobbs, N.M.				
Field Sample No./ Identification	Date and Time	Grb	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS
MW2: 31.5-33	2/27/92 14:30	✓		16oz. WMC	Soil	ice	TPH (418.1) Volatiles (8240)	
MW3: 31-33	2/28/92 6:30	✓		↓	↓	↓	↓	
MW3: 0222B92	2/28/92 12:30	✓		1 L glass	water	HCl ice	TPH (418.1)	
↓	↓	✓		8oz. glass	↓	ice	pH	
↓	↓	✓		3 vials	↓	HCl ice	Volatiles (8240)	
↓	↓	✓		1 L glass	↓	ice	TCLP metals (6010/7000/1311)	
Samplers: (Signature) <i>Roger P. Hobbs</i>		Relinquished by: (Signature) <i>Roger P. Hobbs</i>		Date: 2/28/92 Time: 14:00		Received by: (Signature) <i>[Signature]</i>		Date: Time: Intact
Affiliation <i>Simon Hydro - Search</i>		Relinquished by: (Signature)		Date: Time: Intact		Received by: (Signature) <i>[Signature]</i>		Date: Time: Intact
Relinquished by: (Signature)		Relinquished by: (Signature)		Date: Time: Intact		Received by: (Signature) <i>[Signature]</i>		Date: Time: Intact
Relinquished by: (Signature)		Relinquished by: (Signature)		Date: Time: Intact		Received by: (Signature) <i>[Signature]</i>		Date: Time: Intact
Relinquished by: (Signature)		Relinquished by: (Signature)		Date: Time: Intact		Received by: (Signature) <i>[Signature]</i>		Date: Time: Intact
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Relinquished by: (Signature)		Relinquished by: (Signature)		Date: Time: Intact		Received by: (Signature) <i>[Signature]</i>		Date: Time: Intact
Relinquished by: (Signature)		Relinquished by: (Signature)		Date: Time: Intact		Received by: (Signature) <i>[Signature]</i>		Date: Time: Intact
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Relinquished by: (Signature)		Relinquished by: (Signature)		Date: Time: Intact		Received by: (Signature) <i>[Signature]</i>		Date: Time: Intact
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Relinquished by: (Signature)		Relinquished by: (Signature)		Date: Time: Intact		Received by: (Signature) <i>[Signature]</i>		Date: Time: Intact
Relinquished by: (Signature)		Relinquished by: (Signature)		Date: Time: Intact		Received by: (Signature) <i>[Signature]</i>		Date: Time: Intact
Relinquished by: (Signature)		Relinquished by: (Signature)		Date: Time: Intact		Received by: (Signature) <i>[Signature]</i>		Date: Time: Intact
Relinquished by: (Signature)		Relinquished by: (Signature)		Date: Time: Intact		Received by: (Signature) <i>[Signature]</i>		Date: Time: Intact
Relinquished by: (Signature)		Relinquished by: (Signature)		Date: Time: Intact		Received by: (Signature) <i>[Signature]</i>		Date: Time: Intact
Relinquished by: (Signature)		Relinquished by: (Signature)		Date: Time: Intact		Received by: (Signature) <i>[Signature]</i>		Date: Time: Intact
Relinquished by: (Signature)		Relinquished by: (Signature)		Date: Time: Intact		Received by: (Signature) <i>[Signature]</i>		Date: Time: Intact
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Relinquished by: (Signature)		Relinquished by: (Signature)		Date: Time: Intact		Received by: (Signature) <i>[Signature]</i>		Date: Time: Intact
Relinquished by: (Signature)		Relinquished by: (Signature)		Date: Time: Intact		Received by: (Signature) <i>[Signature]</i>		Date: Time: Intact
Relinquished by: (Signature)		Relinquished by: (Signature)		Date: Time: Intact		Received by: (Signature) <i>[Signature]</i>		Date: Time: Intact
Relinquished by: (Signature)		Relinquished by: (Signature)		Date: Time: Intact		Received by: (Signature) <i>[Signature]</i>		Date: Time: Intact
Relinquished by: (Signature)		Relinquished by: (Signature)		Date: Time: Intact		Received by: (Signature) <i>[Signature]</i>		Date: Time: Intact
Relinquished by: (Signature)		Relinquished by: (Signature)		Date: Time: Intact		Received by: (Signature) <i>[Signature]</i>		Date: Time: Intact
Relinquished by: (Signature)		Relinquished by: (Signature)		Date: Time: Intact		Received by: (Signature) <i>[Signature]</i>		Date: Time: Intact
Relinquished by: (Signature)		Relinquished by: (Signature)		Date: Time: Intact		Received by: (Signature) <i>[Signature]</i>		Date: Time: Intact
Relinquished by: (Signature)		Relinquished by: (Signature)		Date: Time: Intact		Received by: (Signature) <i>[Signature]</i>		Date: Time: Intact
Relinquished by: (Signature)		Relinqu						

SPL HOUSTON ENVIRONMENTAL LABORATORY

SAMPLE LOGIN CHECKLIST

DATE: 2/29/92 TIME: 12:30 CLIENT NO. _____
 LOT NO. _____ CONTRACT NO. _____

CLIENT SAMPLE NOS. _____

SPL SAMPLE NOS.: F2-02-493

- | | <u>YES</u> | <u>NO</u> |
|---|---------------------|-------------------------|
| 1. Is a Chain-of-Custody form present? | <u>X</u> | _____ |
| 2. Is the COC properly completed? | <u>X</u> | _____ |
| If no, describe what is incomplete: | | |
| _____ | | |
| _____ | | |
| If no, has the client been contacted about it? | | |
| (Attach subsequent documentation from client about the situation) | | |
| 3. Is airbill/packing list/bill of lading with shipment? | <u>X</u> | _____ |
| If yes, ID#: <u>Fedex</u> | | |
| 4. Is a USEPA Traffic Report present? | _____ | <u>X</u> |
| 5. Is a USEPA SAS Packing List present? | _____ | <u>X</u> |
| 6. Are custody seals present on the package? | <u>X</u> | _____ |
| If yes, were they intact upon receipt? | | |
| 7. Are all samples tagged or labeled? | <u>X</u> | _____ |
| Do the sample tags/labels match the COC? | | |
| If no, has the client been contacted about it? | | |
| (Attach subsequent documentation from client about the situation) | | |
| 8. Do all shipping documents agree? | <u>X</u> | _____ |
| If no, describe what is in nonconformity: | | |
| _____ | | |
| _____ | | |
| 9. Condition/temperature of shipping container: | <u>good</u> | <u>24°C</u> |
| 10. Condition/temperature of sample bottles: | <u>intact</u> | <u>12°C</u> |
| 11. Sample Disposal?: | <u>SPL disposal</u> | <u>Return to client</u> |

NOTES (reference item number if applicable):
pH out of hold time upon arrival

ATTEST: [Signature] DATE: 2/29/92
 DELIVERED FOR RESOLUTION: REC'D DATE: _____
 RESOLVED: _____ DATE: _____

February 1992 Investigation
(Total Dissolved Solids)



SPL, INC.

REPORT APPROVAL SHEET

WORK ORDER NUMBER: F2-04-076

Approved for release by:

M. Scott Sample Date: 4/9/92

S. Sample, Project Management Supervisor

C. Schreiner Date: 4/9/92

C. Schreiner, Quality Assurance Manager



8880 Interchange Drive, Houston, Texas 77054 713/660-0901

CASE NARRATIVE

QUALITY CONTROL RESULTS SUMMARY

WORK ORDER NO(S).: F2-04-076

SAMPLE NO(S).: -01A to -04A

Water samples F2-04-076 -01A to -04A were analyzed for Total Dissolved Solids by USEPA method 160.1. The samples were received after the maximum holding time had expired. In addition, sample -04A was preserved with hydrochloric acid. Method 160.1 does not specify a preservative other than to cool samples to 4 °C.

A handwritten signature in cursive script, reading 'Cynthia Schreiner', is written over a horizontal line.

Cynthia Schreiner
Quality Assurance Manager



Simon Hydro-Search
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F204076-01A
Invoice #: 406863
Report Date: 04/08/92

Project No. 504867.00
MW1 022792

Date Received: 04/03/92
Date Collected: 02/27/92 18:00:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Total Dissolved Solids METHOD 160.1	801 mg/L	1	04/06/92	DSE

SPL ENVIRONMENTAL LABORATORIES, INC.



Simon Hydro-Search
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F204076-02A
Invoice #: 406863
Report Date: 04/08/92

Project No. 504867.00
MW2 022892

Date Received: 04/03/92
Date Collected: 02/28/92 12:10:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Total Dissolved Solids METHOD 160.1	1680 mg/L	1	04/06/92	DSE

SPL ENVIRONMENTAL LABORATORIES, INC.



Simon Hydro-Search
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F204076-03A
Invoice #: 406863
Report Date: 04/08/92

Project No. 504867.00
MW3 022892

Date Received: 04/03/92
Date Collected: 02/28/92 12:30:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Total Dissolved Solids METHOD 160.1	1140 mg/L	1	04/06/92	DSE

SPL ENVIRONMENTAL LABORATORIES, INC.



Simon Hydro-Search
3334 Richmond Ave.
Suite 200
Houston, TX 77098
Attn: Roger Pokluda

F204076-04A
Invoice #: 406863
Report Date: 04/08/92

Project No. 504867.00
WW2 2492

Date Received: 04/03/92
Date Collected: 02/24/92 12:10:00

Test Name Method	Result Units	Detection Limit	Date Started	Analyst
Total Dissolved Solids METHOD 160.1	1140 mg/L	1	04/06/92	DSE

SPL ENVIRONMENTAL LABORATORIES, INC.



8880 Interchange Drive, Houston, Texas 77054 713/660-0901
Wet Chemistry QA/QC Validation Report

Test Code TDS

Date 4-6-92

Analyst DSE

Method 160.1

Time 11:00 AM

Matrix LIQUID

Of Samples in Set 5

Detection Limit 1

Sample #'s in Set	<u>204035-01C</u>	<u>204076-01A → 01A</u>			Units <u>Mg/L</u>

Standards	EM, %T, ABS.	Actual Concentration	Theoretical Concentration	% Recovery	Upper Limit	Lower Limit
Blank		<u>0.0002</u>	<u>0.0000</u>	<u>ND</u>	<u>NA</u>	<u>NA</u>
#1						
#2						
#3						
#4						
Check Std.						

Duplicate	#1	#2	RPD (%)	Upper Limit	Lower Limit	Dilution
<u>204076-01A</u>	<u>802</u>	<u>799</u>	<u>0.37</u>	<u>7.6</u>	<u>5.6</u>	<u>1</u>

Spike Sample	Concentration Before Spike	Amount Added	Concentration After Spike	After - Before	% Recovery	Upper Limit	Lower Limit
<u>N/A</u>							

Spike Recovery Calculation

$$\% \text{ Recovery} = \frac{(\text{Actual} - \text{Original})}{\text{Amount Added}} \times 100$$

Relative Percent Difference Calculation

$$\text{RPD} = \frac{(\#1 - \#2)}{(\#1 + \#2)(0.5)} \times 100$$

Reviewed By Maria G. Villarreal

Approved By Cynthia Schreiner

Date 4/7/92

Date 4/7/92

F-2-04-076



Environmental Laboratory
8880 Interchange Drive
Houston, Texas 77054
713/660-0901

Analysis Request and Chain of Custody Record

[illegible]

SPL HOUSTON ENVIRONMENTAL LABORATORY

SAMPLE LOGIN CHECKLIST

DATE: 4/3/92 TIME: 7:30 CLIENT NO. TOXENG
 LOT NO. _____ CONTRACT NO. _____

CLIENT SAMPLE NOS. F204076

SPL SAMPLE NOS.: _____

- | | <u>YES</u> | <u>NO</u> |
|---|-----------------------|------------------------|
| 1. Is a Chain-of-Custody form present? | <u>✓</u> | |
| 2. Is the COC properly completed? | <u>✓</u> | |
| If no, describe what is incomplete: | | |
| _____ | | |
| _____ | | |
| If no, has the client been contacted about it? | | |
| (Attach subsequent documentation from client about the situation) | | |
| 3. Is airbill/packing list/bill of lading with shipment? | <u>✓</u> | |
| If yes, ID#: <u>By client / samples in hand</u> | | |
| 4. Is a USEPA Traffic Report present? | | <u>✓</u> |
| 5. Is a USEPA SAS Packing List present? | | <u>✓</u> |
| 6. Are custody seals present on the package? | | <u>✓</u> |
| If yes, were they intact upon receipt? | | |
| 7. Are all samples tagged or labeled? | <u>✓</u> | |
| Do the sample tags/labels match the COC? | | |
| If no, has the client been contacted about it? | | |
| (Attach subsequent documentation from client about the situation) | | |
| 8. Do all shipping documents agree? | <u>✓</u> | |
| If no, describe what is in nonconformity: | | |
| _____ | | |
| 9. Condition/temperature of shipping container: | <u>good 4°C</u> | |
| 10. Condition/temperature of sample bottles: | <u>in good</u> | |
| 11. Sample Disposal?: | SPL disposal <u>✓</u> | Return to client _____ |

NOTES (reference item number if applicable) (4)
Samples need hold Time Narrative

ATTEST: Jojo / Canale DATE: 4/3/92
 DELIVERED FOR RESOLUTION: REC'D DATE: _____
 RESOLVED: _____ DATE: _____