

1R - 427-20

REPORTS

DATE:

1-31-2003

1R427-~~77~~
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FINAL REPORT

**RICE OPERATING COMPANY
JUNCTION BOX FINAL REPORT**

BOX LOCATION

SWD SYSTEM	JUNCTION	UNIT	SECTION	TOWNSHIP	RANGE	COUNTY	BOX DIMENSIONS - FEET		
EME	A-35 EOL	A	35	20 S	36 E	Lea	Length	Width	Depth

LAND TYPE: BLM _____ STATE _____ FEE LANDOWNER Tuffy Cooper OTHER _____

Depth to Groundwater 122 feet NMOCD SITE ASSESSMENT RANKING SCORE: 0

Date Started 1/13/2003 Date Completed 1/13/2003 OCD Witness No

Soil Excavated 1400 cubic yards Excavation Length 15 Width 12 Depth 8 feet

Soil Disposed 0 cubic yards Offsite Facility n/a Location n/a

FINAL ANALYTICAL RESULTS: Sample Date 1/13/2003 Sample Depth 8'

Procure 5-point composite sample of bottom and 4-point composite sample of sidewalls. TPH, BTEX and Chloride laboratory test results completed by using an approved lab and testing procedures pursuant to NMOCD guidelines.

Sample Location	Benzene mg/kg	Toluene mg/kg	Ethyl Benzene mg/kg	Total Xylenes mg/kg	GRO mg/kg	DRO mg/kg	Chlorides mg/kg
BOTTOM	<0.025	<0.025	<0.025	<0.025	<10.0	29.4	496
SIDEWALLS	<0.025	<0.025	<0.025	<0.025	<10.0	<10.0	549
REMEDIATED	<0.025	<0.025	<0.025	<0.025	16.6	706	372

General Description of Remedial Action: This junction box was located inside an active production battery and surrounded by aged hardpan. Chlorides field-tested around 400 ppm down to 12' bgs while TPH drastically declined from 4' to 8' bgs. ROC originally planned to excavate a 10' radius surrounding the box, but due to space constraints in the battery, a 15' x 12' area was excavated to 8' bgs (where TPH impact ceased). A compacted clay barrier was installed at 8' bgs to hinder vertical migration of impact and the soil was blended and backfilled into the excavation. Since the facility is still active, the principle objective of the upgrade was to remove the source of impact. Since groundwater is 122' bgs, ROC does not consider the chloride left in place threatening to the groundwater or public health.

cc: lab results; diagram; photos

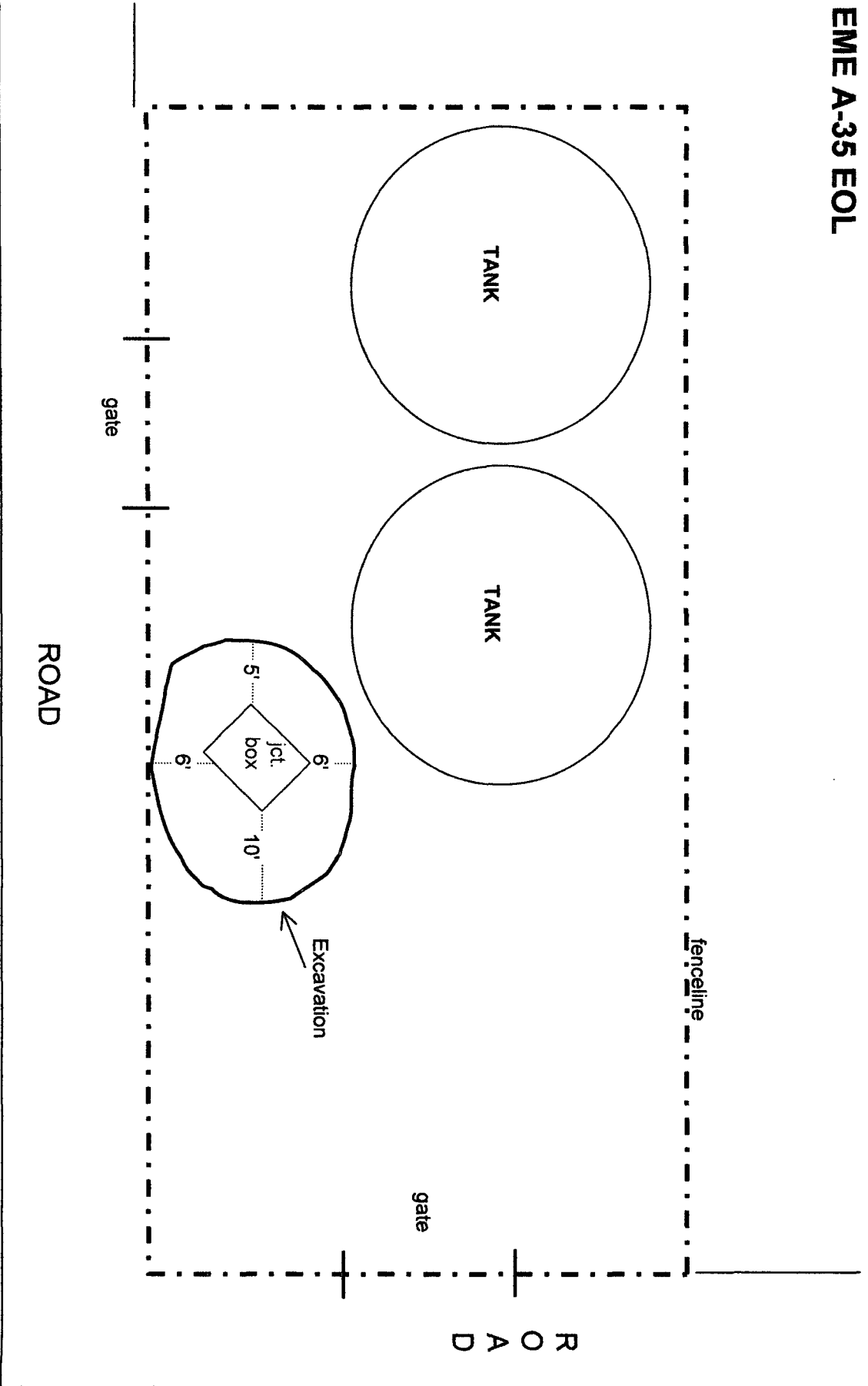
CHLORIDE FIELD TESTS

LOCATION	DEPTH	ppm
Vertical	4'	440
	12'	440
5'W	8'	587
6'N	8'	221
10' E	8'	606
6' S	8'	549

I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

DATE 1/31/2003 PRINTED NAME Kristin Farris
SIGNATURE Kristin Farris TITLE Project Scientist

EME A-35 EOL



new
jct. box

EME A-35 EOL box upgrade



Before Remediation



Impact Excavation



Clay Liner

EME A-35 EOL box upgrade



Backfilled



Box Construction



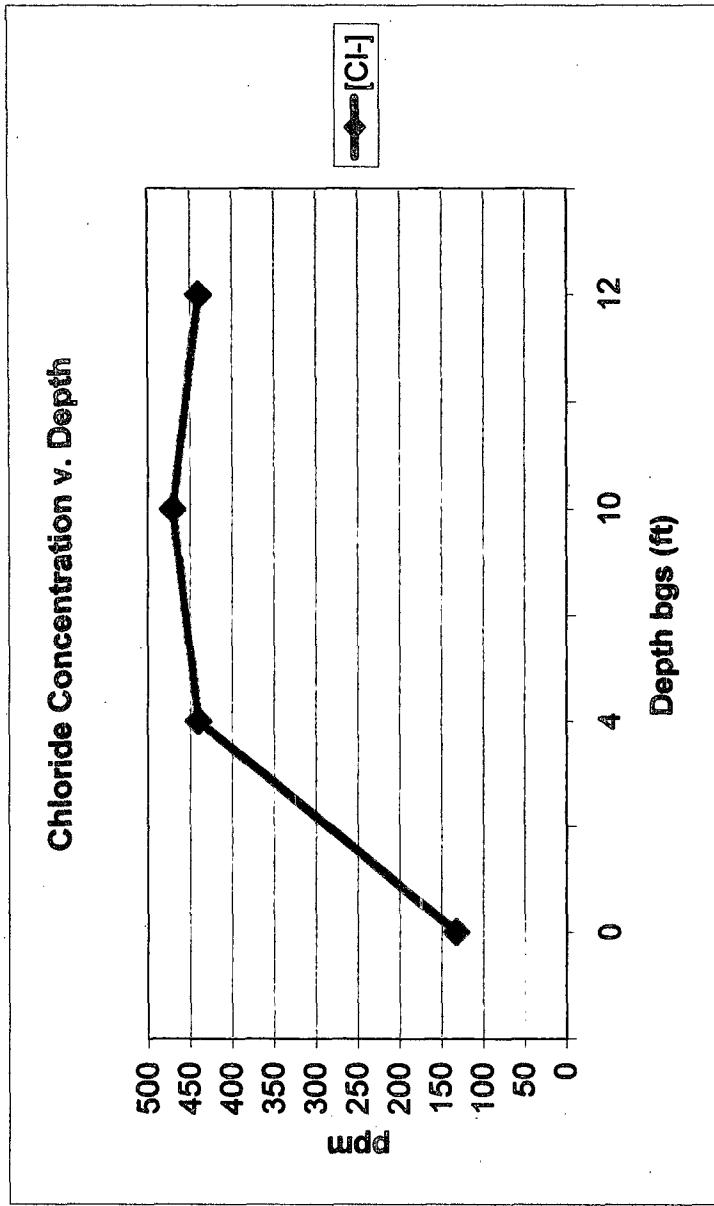
Complete Box

CHLORIDE CONCENTRATION CURVE

RICE Operating Company

EME A-35 EOL
T20S, R36S

Depth bgs (ft)	[Cl-] ppm
0	133
4	440
10	471
12	440



Groundwater = 122 ft

A-35
EOL

ANALYTICAL REPORT

Prepared for:

DEREK ROBINSON
B & H ENVIRONMENTAL
2858 STEVEN ROAD
ODESSA, TX 79764

Project: Rice Operating

PO#:

Order#: G0305449

Report Date: 01/16/2003

Certificates

US EPA Laboratory Code TX00158

ENVIRONMENTAL LAB OF TEXAS

SAMPLE WORK LIST

B & H ENVIRONMENTAL
2858 STEVEN ROAD
ODESSA, TX 79764
915-368-4031

Order#: G0305449
Project: None Given
Project Name: Rice Operating
Location: Penrock Fopeano EOL

The samples listed below were submitted to Environmental Lab of Texas and were received under chain of custody. Environmental Lab of Texas makes no representation or certification as to the method of sample collection, sample identification, or transportation/handling procedures used prior to the receipt of samples by Environmental Lab of Texas, unless otherwise noted.

<u>Lab ID:</u>	<u>Sample :</u>	<u>Matrix:</u>	<u>Date / Time</u> <u>Collected</u>	<u>Date / Time</u> <u>Received</u>	<u>Container</u>	<u>Preservative</u>
0305449-01	Bottom Comp. @ 8'	SOIL	1/13/03 13:30	1/14/03 8:05	4 oz Glass	Ice
<u>Lab Testing:</u>		Rejected: No	Temp:	3.5 C		
8015M						
8021B/5030 BTEX						
Chloride						
0305449-02	Wall Composite @ 6'	SOIL	1/13/03 13:35	1/14/03 8:05	4 oz Glass	Ice
<u>Lab Testing:</u>		Rejected: No	Temp:	3.5 C		
8015M						
8021B/5030 BTEX						
Chloride						
0305449-03	Remediated Composite	SOIL	1/13/03 15:30	1/14/03 8:05	4 oz Glass	Ice
<u>Lab Testing:</u>		Rejected: No	Temp:	3.5 C		
8015M						
8021B/5030 BTEX						
Chloride						

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

DEREK ROBINSON
B & H ENVIRONMENTAL
2858 STEVEN ROAD
ODESSA, TX 79764

Order#: G0305449
Project: None Given
Project Name: Rice Operating
Location: Penrock Fopeano EOL

Lab ID: 0305449-01
Sample ID: Bottom Comp. @ 8'

8015M

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
		1/14/03	1	1	CK	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	29.4	10.0
TOTAL, C6-C35	29.4	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	71%	70	130
1-Chlorooctadecane	70%	70	130

8021B/5030 BTEX

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
0004365-02		1/14/03 23:02	1	25	CK	8021B

Parameter	Result mg/kg	RL
Benzene	<0.025	0.025
Toluene	<0.025	0.025
Ethylbenzene	<0.025	0.025
p/m-Xylene	<0.025	0.025
o-Xylene	<0.025	0.025

Surrogates	% Recovered	QC Limits (%)	
aaa-Toluene	82%	80	120
Bromofluorobenzene	86%	80	120

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

DEREK ROBINSON
B & H ENVIRONMENTAL
2858 STEVEN ROAD
ODESSA, TX 79764

Order#: G0305449
Project: None Given
Project Name: Rice Operating
Location: Penrock Fopeano EOL

Lab ID: 0305449-02
Sample ID: Wall Composite @ 6'

8015M

Method	Date	Date	Sample	Dilution	Analyst	Method
<u>Blank</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Amount</u>	<u>Factor</u>		
		1/14/03	1	1	CK	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	77%	70	130
1-Chlorooctadecane	70%	70	130

8021B/5030 BTEX

Method	Date	Date	Sample	Dilution	Analyst	Method
<u>Blank</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Amount</u>	<u>Factor</u>		
0004365-02		1/15/03 15:56	1	25	CK	8021B

Parameter	Result mg/kg	RL
Benzene	<0.025	0.025
Toluene	<0.025	0.025
Ethylbenzene	<0.025	0.025
p/m-Xylene	<0.025	0.025
o-Xylene	<0.025	0.025

Surrogates	% Recovered	QC Limits (%)	
aaa-Toluene	91%	80	120
Bromofluorobenzene	96%	80	120

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

DEREK ROBINSON
B & H ENVIRONMENTAL
2858 STEVEN ROAD
ODESSA, TX 79764

Order#: G0305449
Project: None Given
Project Name: Rice Operating
Location: Penrock Fopeano EOL

Lab ID: 0305449-03
Sample ID: Remediated Composite

8015M

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
		1/14/03	1	1	CK	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	16.6	10.0
DRO, >C12-C35	706	10.0
TOTAL, C6-C35	723	10.0

Surrogates	% Recovered	QC Limits (%)	
1-Chlorooctane	88%	70	130
1-Chlorooctadecane	84%	70	130

8021B/5030 BTEX

Method Blank	Date Prepared	Date Analyzed	Sample Amount	Dilution Factor	Analyst	Method
0004365-02		1/15/03 16:17	1	25	CK	8021B

Parameter	Result mg/kg	RL
Benzene	<0.025	0.025
Toluene	<0.025	0.025
Ethylbenzene	<0.025	0.025
p/m-Xylene	<0.025	0.025
o-Xylene	<0.025	0.025

Surrogates	% Recovered	QC Limits (%)	
aaa-Toluene	87%	80	120
Bromofluorobenzene	94%	80	120

Approval: Sandra Biezugbe 01-17-03
Raland K. Tuttle, Lab Director, QA Officer
Celey D. Keene, Org. Tech. Director
Jeanne McMurrey, Inorg. Tech. Director
Sandra Biezugbe, Lab Tech.
Sara Molina, Lab Tech.

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

DEREK ROBINSON
B & H ENVIRONMENTAL
2858 STEVEN ROAD
ODESSA, TX 79764

Order#: G0305449
Project: None Given
Project Name: Rice Operating
Location: Penrock Fopeano EOL

Lab ID: 0305449-01
Sample ID: Bottom Comp. @ 8'

Test Parameters

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Dilution Factor</u>	<u>RL</u>	<u>Method</u>	<u>Date Analyzed</u>	<u>Analyst</u>
Chloride	496	mg/kg	1	20	9253	1/14/03	SB

Lab ID: 0305449-02
Sample ID: Wall Composite @ 6'

Test Parameters

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Dilution Factor</u>	<u>RL</u>	<u>Method</u>	<u>Date Analyzed</u>	<u>Analyst</u>
Chloride	549	mg/kg	1	20	9253	1/14/03	SB

Lab ID: 0305449-03
Sample ID: Remediated Composite

Test Parameters

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Dilution Factor</u>	<u>RL</u>	<u>Method</u>	<u>Date Analyzed</u>	<u>Analyst</u>
Chloride	372	mg/kg	1	20	9253	1/14/03	SB

Approval: Jeanne McMurrey 01-17-03
Raland K. Tuttle, Lab Director, QA Officer Date
Celey D. Keene, Org. Tech. Director
Jeanne McMurrey, Inorg. Tech. Director
Sandra Biezugbe, Lab Tech.
Sara Molina, Lab Tech.

ENVIRONMENTAL LAB OF TEXAS

QUALITY CONTROL REPORT

8015M

Order#: G0305449

BLANK	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg		0004352-02			<10.0		
MS	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg		0305449-02	0	952	807	84.8%	
MSD	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg		0305449-02	0	952	846	88.9%	4.7%
SRM	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg		0004352-05		1000	775	77.5%	

ENVIRONMENTAL LAB OF TEXAS

QUALITY CONTROL REPORT

8021B/5030 BTEX

Order#: G0305449

BLANK	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Benzene-mg/kg		0004365-02			<0.025		
Toluene-mg/kg		0004365-02			<0.025		
Ethylbenzene-mg/kg		0004365-02			<0.025		
p/m-Xylene-mg/kg		0004365-02			<0.025		
o-Xylene-mg/kg		0004365-02			<0.025		
MS	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Benzene-mg/kg		0305449-02	0	0.1	0.104	104.%	
Toluene-mg/kg		0305449-02	0	0.1	0.106	106.%	
Ethylbenzene-mg/kg		0305449-02	0	0.1	0.108	108.%	
p/m-Xylene-mg/kg		0305449-02	0	0.2	0.228	114.%	
o-Xylene-mg/kg		0305449-02	0	0.1	0.110	110.%	
MSD	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Benzene-mg/kg		0305449-02	0	0.1	0.098	98.%	5.9%
Toluene-mg/kg		0305449-02	0	0.1	0.101	101.%	4.8%
Ethylbenzene-mg/kg		0305449-02	0	0.1	0.103	103.%	4.7%
p/m-Xylene-mg/kg		0305449-02	0	0.2	0.216	108.%	5.4%
o-Xylene-mg/kg		0305449-02	0	0.1	0.104	104.%	5.6%
SRM	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Benzene-mg/kg		0004365-05		0.1	0.104	104.%	
Toluene-mg/kg		0004365-05		0.1	0.107	107.%	
Ethylbenzene-mg/kg		0004365-05		0.1	0.108	108.%	
p/m-Xylene-mg/kg		0004365-05		0.2	0.225	112.5%	
o-Xylene-mg/kg		0004365-05		0.1	0.108	108.%	

ENVIRONMENTAL LAB OF TEXAS

QUALITY CONTROL REPORT

Test Parameters

Order#: G0305449

BLANK	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Chloride-mg/kg		0004333-01			<20.0		
MS	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Chloride-mg/kg		0305446-01	0	1131	1010	89.3%	
MSD	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Chloride-mg/kg		0305446-01	1010	1131	1010	89.3%	0.0%
SRM	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Chloride-mg/kg		0004333-04		5000	4960	99.2%	

