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Laboratory Evaluation of In Situ Chemical Oxidation for Groundwater Remediation, Test Area North, Operable Unit 1-07B, Idaho National Engineering and Environmental Laboratory

Volume Four - Appendix G

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LABORATORY EVALUATION OF IN SITU CHEMICAL OXIDATION FOR GROUNDWATER REMEDIATION, TEST AREA NORTH, OPERABLE UNIT 1-07B, IDAHO NATIONAL ENGINEERING AND ENVIRONMENTAL LABORATORY

Volume Four - Appendix G

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PREFACE

This appendix supports the results and discussion of the laboratory work performed to evaluate the feasibility of in situ chemical oxidation for Idaho National Environmental and Engineering Laboratory's (INEEL) Test Area North (TAN) which is contained in ORNL/TM-13711/V1. This volume contains Appendix G.

Appendix G is a presentation of VOC chromatography data collected during the study. Information on the calibration curves and calibration checks used as well as the sample GC reports themselves are included here. The concentration values presented on the GC reports are calculation using the data from the applicable calibration curve and any necessary dilutions which were made.

APPENDIX G
CALIBRATION RECORDS AND SAMPLES ANALYSIS RECORDS

ORNL Environmental Sciences Division

G.C. Sequence Summary

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCE (%Drift)	Final Cal Ck TCE (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
1/30/98	01/30/98	19-58	-0.18	0.10	No (4 Analyses)	2a-2	
Sequence Start Time:	1/30/98 6:08 PM	Sequence Finish Time:	1/31/98 3:12 AM	Run Time (hrs):	9.1		

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCE (%Drift)	Final Cal Ck TCE (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
2/2/98	01/30/98	43R,51R,55R	-0.11	-9.64	No (1 Analysis)	2a-2	Re-peat Analyses
Sequence Start Time:	2/2/98 3:54 PM	Sequence Finish Time:	2/2/98 4:57 PM	Run Time (hrs):	1.1		

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCE (%Drift)	Final Cal Ck TCE (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
2/19/98	01/30/98	59-132 (non-inclusive)	-3.38	-2.92	No (7 Analyses)	2b-1	
Sequence Start Time:	2/19/98 4:45 PM	Sequence Finish Time:	2/20/98 6:20 AM	Run Time (hrs):	13.6		

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCE (%Drift)	Final Cal Ck TCE (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
2/20/98	01/30/98	79-132 (non-inclusive)	-1.44	*See Note	No (1 analyzed)	2b-1	*Only 1 Blank & Cal. Ck. Performed
Sequence Start Time:	2/20/98 4:38 PM	Sequence Finish Time:	2/20/98 8:42 PM	Run Time (hrs):	4.1		(18 remaining 2b-1 samples were analyzed)

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCE (%Drift)	Final Cal Ck TCE (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
3/1/98	01/30/98	133-167	0.45	-2.18	No (5 analyzed)	2c-1	
Sequence Start Time:	3/1/98 11:05 AM	Sequence Finish Time:	3/1/98 8:07 PM	Run Time (hrs):	9.0		

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCE (%Drift)	Final Cal Ck TCE (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
3/6/98	01/30/98	133R,134R,168-203	-3.20	-2.47	No (5 Analyzed)	2c-1	
Sequence Start Time:	3/6/98 3:42 PM	Sequence Finish Time:	3/7/98 1:24 AM	Run Time (hrs):	9.7	2a-3	

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCE (%Drift)	Final Cal Ck TCE (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
3/13/98	01/30/98	204-224	-4.31	-1.70	No (3 Analyzed)	2c-1	
Sequence Start Time:	3/13/98 4:37 PM	Sequence Finish Time:	3/13/98 10:00 PM	Run Time (hrs):	5.4	2a-3	

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCE (%Drift)	Final Cal Ck TCE (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
3/30/98	01/30/98	225-230,210R,211R	-2.46	-1.55	No (2 analyzed)	2c-1	
Sequence Start Time:	3/30/98 4:31 PM	Sequence Finish Time:	3/30/98 6:54 PM	Run Time (hrs):	2.4		

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCE (%Drift)	Final Cal Ck TCE (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
4/7/98	01/30/98	231-242	-6.54	-6.54	No (2 Analyzed)	Non-SOW	*Lost #232 due to G.C. Error
Sequence Start Time:	4/7/98 3:25 PM	Sequence Finish Time:	4/8/98 9:01 AM	Run Time (hrs):	17.6	Add. Exp.	

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G.C. Sequence Summary

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCE (%Drift)	Final Cal Ck TCE (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
4/9/98	01/30/98	231R,232R	-11.13	*See Note	No (2 Analyzed)	Non-SOW	Only 1 cal ck analyzed
Sequence Start Time:	4/9/98 10:11 AM	Sequence Finish Time:	4/9/98 11:14 AM	Run Time (hrs):	1.0	Exp. Repeats	(running on vol of cal. Ck on hand)

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCE (%Drift)	Final Cal Ck TCE (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
4/13/98	01/30/98	245-284	*-21.78	*-20.96	No (5 Analyzed)	2b-3	Cal Ck diluted from a 500ppb std
Sequence Start Time:	4/13/98 3:26 PM	Sequence Finish Time:	4/14/98 1:19 AM	Run Time (hrs):	9.9		(likely due to human error)

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCE (%Drift)	Final Cal Ck TCE (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
4/14/98	01/30/98	243-244, 4/13/98 Repeats	-11.38	-11.43	No (3 Analyzed)	2b-3	
Sequence Start Time:	4/14/98 1:28 PM	Sequence Finish Time:	4/14/98 6:04 PM	Run Time (hrs):	4.6	Cont'd	

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCE (%Drift)	Final Cal Ck TCE (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
4/22/98	04/22/98	243R,244R	New Curve	New Curve	No (2 Analyzed)	2b-3	Prepared New Curve, Therefore Cal
Sequence Start Time:	22 Apr 98 01:44 PM	Sequence Finish Time:	Apr 98 03:24 PM	Run Time (hrs):	1.7	Repeats	Cks were not performed

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCE (%Drift)	Final Cal Ck TCE (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
4/30/98	04/22/98	285-306	0.06	-0.53	No (3 Analyzed)	Non-SOW	
Sequence Start Time:	30 Apr 98 04:36 PM	Sequence Finish Time:	4/30/98 9:42 PM	Run Time (hrs):	5.1	Add. Exp.	

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCE (%Drift)	Final Cal Ck TCE (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
5/8/98	04/22/98	303R, 304R	-0.12	0.76	No (2 Analyzed)	Non-SOW	
Sequence Start Time:	08 May 98 03:32 PM	Sequence Finish Time:	May 98 04:48 PM	Run Time (hrs):	1.3	Exp. Repeats	

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCE (%Drift)	Final Cal Ck TCE (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
5/15/98	04/22/98	338-351	0.06	0.53	No (2 analyzed)	2a-3b	
Sequence Start Time:	5/15/98 7:06 AM	Sequence Finish Time:	May 98 11:42 AM	Run Time (hrs):	4.6		

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCE (%Drift)	Final Cal Ck TCE (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
5/26/98	04/22/98	352-353	-0.19	*See Note	No (1 Analyzed)	4a-R1	*Only 1 Cal Ck Used
Sequence Start Time:	26 May 98 11:29 AM	Sequence Finish Time:	May 98 11:52 AM	Run Time (hrs):	0.4		due to small sequence run

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCE (%Drift)	Final Cal Ck TCE (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
5/28/98	04/22/98	354-417	-0.39	0.73	No (8 Analyzed)	4a-R1	
Sequence Start Time:	28 May 98 02:14 PM	Sequence Finish Time:	May 98 05:50 AM	Run Time (hrs):	15.6		

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G.C. Sequence Summary

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCE (%Drift)	Final Cal Ck TCE (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
5/29/98	04/22/98	396-398R, 487-553	-1.55	1.57	No (8 Analyzed)	4a-R2	
Sequence Start Time: 29 May 98 03:27 PM		Sequence Finish Time: 30 May 98 08:09 A		Run Time (hrs):	16.7		

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCE (%Drift)	Final Cal Ck TCE (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
6/4/98	04/22/98	629-695	0.81	1.13	No (8 Analyzed)	4a-R3	
Sequence Start Time: 04 Jun 98 04:38 PM		Sequence Finish Time: 05 Jun 98 08:37 AI		Run Time (hrs):	16.0		

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCE (%Drift)	Final Cal Ck TCE (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
6/15/98	04/22/98	696-765	-1.94	1.18	No (8 Analyzed)	4b-R11	
Sequence Start Time: 15 Jun 98 08:16 AM		Sequence Finish Time: 16 Jun 98 00:55 AI		Run Time (hrs):	16.6		

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCE (%Drift)	Final Cal Ck TCE (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
6/16/98	04/22/98	759R,830-831	-1.73	*See Note	No (1 Analyzed)	4b-R11 Rep	*Only 1 Blank & Cal. Ck. Performed
Sequence Start Time: 16 Jun 98 05:28 PM		Sequence Finish Time: 16 Jun 98 06:18 PM		Run Time (hrs):	0.8	4b-R12	due to small sequence run

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCE (%Drift)	Final Cal Ck TCE (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
6/18/98	04/22/98	832-896	0.37	1.35	No (8 Analyzed)	4b-R12	
Sequence Start Time: 18 Jun 98 04:03 PM		Sequence Finish Time: 19 Jun 98 07:44 AI		Run Time (hrs):	15.7		

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCE (%Drift)	Final Cal Ck TCE (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
061998a	04/22/98	4b-R12 Repeats	-1.32	0.32	No (3 Analyzed)	4b-R12	
Sequence Start Time: 19 Jun 98 10:48 AM		Sequence Finish Time: 19 Jun 98 02:39 PM		Run Time (hrs):	3.9	Repeats	

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCE (%Drift)	Final Cal Ck TCE (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
061998b	04/22/98	763-829	0.81	-0.08	Yes (8 Analyzed)	4a-R5	Blank contained 6-12 ug/L TCE
Sequence Start Time: 19 Jun 98 03:55 PM		Sequence Finish Time: 20 Jun 98 07:30 AI		Run Time (hrs):	15.6		

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCE (%Drift)	Final Cal Ck TCE (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
6/23/98	04/22/98	897-898	-2.51	*See Note	No (1 Analyzed)	4b-R15	*Only 1 Cal Ck Used
Sequence Start Time: 23 Jun 98 09:40 AM		Sequence Finish Time: 23 Jun 98 10:17 AI		Run Time (hrs):	0.6		due to small sequence run

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCE (%Drift)	Final Cal Ck TCE (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
6/27/98	04/22/98	899-961	-3.78	-0.42	Yes (in 1 of 8)	4b-R15	Only 1 blank analysis resulted in TCE
Sequence Start Time: 27 Jun 98 08:18 AM		Sequence Finish Time: 27 Jun 98 11:32 PM		Run Time (hrs):	15.2		detection (<MDL)

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G.C. Sequence Summary

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCB (%Drift)	Final Cal Ck TCB (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
6/29/98	04/22/98	901R-904R	-0.21	*See Note	No (1 Analyzed)	4b-R15	*Only 1 Cal Ck Used
Sequence Start Time:	29 Jun 98 03:54 PM	Sequence Finish Time:	9 Jun 98 05:01 PM	Run Time (hrs):	1.1	Repeats	due to small sequence run

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCB (%Drift)	Final Cal Ck TCB (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
7/8/98	04/22/98	962-963	-5.38	-5.57	No (2 Analyzed)	4b-R16	
Sequence Start Time:	08 Jul 98 12:55 PM	Sequence Finish Time:	8 Jul 98 01:48 PM	Run Time (hrs):	0.9		

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCB (%Drift)	Final Cal Ck TCB (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
7/10/98	04/22/98	964-1028	*-31.34	>100%*	No (8 Analyzed)	4b-R16	*It is believed that the STD was used
Sequence Start Time:	10 Jul 98 03:33 PM	Sequence Finish Time:	1 Jul 98 07:14 AM	Run Time (hrs):	15.7		by mistake, samples yielded expected values.

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCB (%Drift)	Final Cal Ck TCB (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
7/11/98	04/22/98	1030-1097	-4.45	-1.94	No (8 Analyzed)	4a-R7	
Sequence Start Time:	11 Jul 98 08:39 AM	Sequence Finish Time:	2 Jul 98 01:14 AM	Run Time (hrs):	16.6		

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCB (%Drift)	Final Cal Ck TCB (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
7/13/98	04/22/98	4b-R16 Repeats	-4.13	-2.78	No (5 Analyzed)	4b-R16	
Sequence Start Time:	13 Jul 98 11:20 AM	Sequence Finish Time:	3 Jul 98 07:04 PM	Run Time (hrs):	7.7	Repeats	

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCB (%Drift)	Final Cal Ck TCB (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
7/16/98	04/22/98	1246-1312	*Wrong STD Use	-14.15	No (9 Analzyzed)	4a-R4	No TCE detected in 1st cal ck
Sequence Start Time:	16 Jul 98 03:17 PM	Sequence Finish Time:	7 Jul 98 07:25 AM	Run Time (hrs):	16.1		it is believed the 5ppb std may have been used

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCB (%Drift)	Final Cal Ck TCB (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
7/17/98	04/22/98	1105-1195 (not inclusive)	-4.84	-2.87	No (6 Analyzed)	4b-R13	
Sequence Start Time:	35993.36458	Sequence Finish Time:	7 Jul 98 08:24 PM	Run Time (hrs):	11.6		

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCB (%Drift)	Final Cal Ck TCB (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
7/18/98	04/22/98	1098-1188 (not inclusive)	-12.34	-12.01	No (6 Analyzed)	4b-R14	
Sequence Start Time:	18 Jul 98 09:20 AM	Sequence Finish Time:	8 Jul 98 09:10 PM	Run Time (hrs):	11.8		

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCB (%Drift)	Final Cal Ck TCB (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
7/20/98	04/22/98	4b-R14Repeats, 1196-1245	-14.42	-12.73	No (8 Analyzed)	4b-R13	
Sequence Start Time:	20 Jul 98 04:04 PM	Sequence Finish Time:	1 Jul 98 08:21 AM	Run Time (hrs):	16.3	4b-R14	

ORNL Environmental Sciences Divsion

G.C. Sequence Summary

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCE (%Drift)	Final Cal Ck TCE (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
7/21/98	04/22/98	4b-R14 Repeats	-14.07	-13.77	No (5 Analyzed)	4b-R13	
Sequence Start Time: 21 Jul 98 03:57 PM		Sequence Finish Time: 22 Jul 98 00:06 AM		Run Time (hrs):	8.2	4b-R14	

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCE (%Drift)	Final Cal Ck TCE (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
7/30/98	04/22/98	1313-1316	-4.77	-4.44	No (2 Analyzed)	4b-R3	
Sequence Start Time: 30 Jul 98 03:33 PM		Sequence Finish Time: 30 Jul 98 04:51 PM		Run Time (hrs):	1.3	4b-R4	

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCE (%Drift)	Final Cal Ck TCE (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
7/31/98	04/22/98	1317-1414	-4.95	-2.57	No (10 Analyzed)	4b-R3	
Sequence Start Time: 31 Jul 98 04:11 PM		Sequence Finish Time: 01 Aug 98 03:17 PM		Run Time (hrs):	23.1	4b-R4	

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCE (%Drift)	Final Cal Ck TCE (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
8/3/98	04/22/98	4b-R3 Repeats, 1415-1456	-5.02	-3.73	No (7 Analyzed)	4b-R3	
Sequence Start Time: 03 Aug 98 04:33 PM		Sequence Finish Time: 04 Aug 98 07:14 AM		Run Time (hrs):	14.7	4b-R4	

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCE (%Drift)	Final Cal Ck TCE (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
8/4/98	04/22/98	4b-R3 & R4 Repeats	-5.30	-4.62	No (3 Analyzed)	4b-R3Repeats	
Sequence Start Time: 04 Aug 98 04:32 PM		Sequence Finish Time: 04 Aug 98 07:55 PM		Run Time (hrs):	3.4	4b-R4Repeats	

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCE (%Drift)	Final Cal Ck TCE (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
8/12/98	04/22/98	1461-1523	-3.61	-2.47	Yes (7 Analyzed)	4b-R1	All 7 analyses of blank contained
Sequence Start Time: 12 Aug 98 03:41 PM		Sequence Finish Time: 13 Aug 98 06:27 AM		Run Time (hrs):	14.8		approx. 7 ug/L TCE

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCE (%Drift)	Final Cal Ck TCE (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
8/13/98	04/22/98	4b-R1 Repeats	-4.19	-3.31	No (2 Analyzed)	4b-R1	
Sequence Start Time: 13 Aug 98 01:00 PM		Sequence Finish Time: 13 Aug 98 03:06 PM		Run Time (hrs):	2.1	Repeats	

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCE (%Drift)	Final Cal Ck TCE (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
8/14/98	04/22/98	1660-1726	-3.71	-3.16	NO (6 Analyzed)	4b-R2	
Sequence Start Time: 14 Aug 98 03:09 PM		Sequence Finish Time: 15 Aug 98 06:47 AM		Run Time (hrs):	15.6		

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCE (%Drift)	Final Cal Ck TCE (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
8/17/98	04/22/98	1524-1621	-4.15	-1.28	No (10 Analyzed)	4b-R7	
Sequence Start Time: 17 Aug 98 09:37 AM		Sequence Finish Time: 18 Aug 98 10:50 AM		Run Time (hrs):	25.2	4b-R8	

ORNL Environmental Sciences Divsion

G.C. Sequence Summary

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCE (%Drift)	Final Cal Ck TCE (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
8/18/98	04/22/98	1622-1659	-3.85	-1.58	No (5 Analyzed)	4b-R7	
Sequence Start Time: 18 Aug 98 02:56 PM		Sequence Finish Time: 19 Aug 98 10:25 AM		Run Time (hrs):	19.5	4b-R8	

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCE (%Drift)	Final Cal Ck TCE (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
8/19/98	04/22/98	9 Repeats	-11.83	-10.22	No (2 Analyzed)	4b-R7	
Sequence Start Time: 19 Aug 98 03:25 PM		Sequence Finish Time: 19 Aug 98 05:46 PM		Run Time (hrs):	2.3	4b-R8	

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCE (%Drift)	Final Cal Ck TCE (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
8/20/98	04/22/98	1727-1793	-10.59	-10.46	No (8 Analyzed)	4a-R6	
Sequence Start Time: 20 Aug 98 03:07 PM		Sequence Finish Time: 21 Aug 98 07:11 AM		Run Time (hrs):	16.1		

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCE (%Drift)	Final Cal Ck TCE (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
8/21/98	04/22/98	22 Repeat Analyses	-11.00	-10.18	No (3 blanks)	4a-R6	
Sequence Start Time: 21 Aug 98 01:04 PM		Sequence Finish Time: 21 Aug 98 06:24 PM		Run Time (hrs):	5.3	Repeats	

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCE (%Drift)	Final Cal Ck TCE (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
8/26/98	04/22/98	1794-1860	-11.26	-8.12	No (8 Analyzed)	4a-R8	
Sequence Start Time: 26 Aug 98 03:14 PM		Sequence Finish Time: 27 Aug 98 07:19 AM		Run Time (hrs):	16.1		

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCE (%Drift)	Final Cal Ck TCE (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
8/26/98	08/26/98	NA	NBW CURVE	NBW CURVE	No		Instrument Calibration
Sequence Start Time: 36033.53125		Sequence Finish Time: 36033.62986		Run Time (hrs):	2.4		

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCE (%Drift)	Final Cal Ck TCE (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
8/28/98b	08/26/98	1861-1923	-3.60	-1.20	Yes (TCE Only <6ppb)	4b-R5	GC Stalled--38hrs between #'s 1870&1871
Sequence Start Time: 28 Aug 98 04:16 PM		Sequence Finish Time: 31 Aug 98 10:34 AM		Run Time (hrs):	66.3		& ~12 hrs between #'s 1920&1921
							Also: 1st CisDCE cal ck out of Range

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCE (%Drift)	Final Cal Ck TCE (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
9/1/98	08/26/98	4b-R5 Repeats	-2.30	-3.20	1,1 DCE@21ppb Only	4b-R5	GC Stalled- 15hrs between 1st Cal Ck and 1873R
Sequence Start Time: 01 Sep 98 04:32 PM		Sequence Finish Time: 36040.42986		Run Time (hrs):	17.8	Repeats	Also: 2nd CisDCE cal ck out of Range

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCE (%Drift)	Final Cal Ck TCE (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
9/2/98	08/26/98	1924-1986	-2.70	-4.20	TCE<11ppb	4b-R6	Not all Blanks Contaminated
Sequence Start Time: 02 Sep 98 01:48 PM		Sequence Finish Time: 36041.56528		Run Time (hrs):	23.8		Also: 1st CisDCE cal ck out of Range

ORNL Environmental Sciences Divsion

G.C. Sequence Summary

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCE (%Drift)	Final Cal Ck TCE (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
9/16/98	8/26/98	1999-2013	-3.50	-5.50	<1ppb (3 Analyzed)	2b-3b	
Sequence Start Time: 16 Sep 98 04:21 PM		Sequence Finish Time: 9/16/98 21:15		Run Time (hrs):	4.9	Matrix Spike	

Sequence Run Date	Calibration Curve Date Used	ORNL GC #s Analyzed	Initial Cal Ck TCE (%Drift)	Final Cal Ck TCE (%Drift)	Blanks Contaminated?	Experiments Involved	Notes
9/17/98	8/26/98	2014-2016	-7.30	-8.80	<1ppb (2 Analyzed)	2b-3b	Both Blanks Not Contaminated
Sequence Start Time: 17 Sep 98 02:20 PM		Sequence Finish Time: 9/17/98 15:54		Run Time (hrs):	1.6	Matrix Spike	

INITIAL CALIBRATION DATA

ORNL Environmental Sciences Divsion

Initial G.C. Calibration Data

Date: 1/30/98

Instrument: Hewlett Packard 5890 Series II G.C.
Instrument Method INEELECD.MTH
Data Analysis Method INEELECD.MTH

Preparation Details: See Logbook, Page: 13
Supelco Custom Mix, LOT No. LA 73307

FileName	C:\HPCHEM\1\DATA\013098\	C:\HPCHEM\1\DATA\013098\	C:\HPCHEM\1\DATA\013098\0	C:\HPCHEM\1\DATA\013098\005	C:\HPCHEM\1\DATA\013098\006	C:\HPCHEM\1\DATA\013098\007R0101.D
Operator(s)	Cline/McCracken	Cline/McCracken	Cline/McCracken	Cline/McCracken	Cline/McCracken	Cline/McCracken
Instrument	ANALYZER1	ANALYZER1	ANALYZER1	ANALYZER1	ANALYZER1	ANALYZER1
ORNL No.	STD 1	STD 2	STD 3	STD 4	STD 5	STD 6
Analysis Date	30 Jan 98 04:12 PM	30 Jan 98 04:25 PM	30 Jan 98 04:38 PM	30 Jan 98 04:51 PM	30 Jan 98 05:04 PM	30 Jan 98 05:17 PM
Report Date	30 Jan 98 04:24 PM	30 Jan 98 04:37 PM	30 Jan 98 04:50 PM	30 Jan 98 05:03 PM	30 Jan 98 05:16 PM	30 Jan 98 05:29 PM
Sample Name	5 ppb VOCs	10 ppb VOCs	50 ppb VOCs	100 ppb VOCs	500 ppb VOCs	1000 ppb VOCs
Dilution Factor	1	1	1	1	1	1
Signal	2	2	2	2	2	2

Pk#	RetTime	Area	VOC	RetTime	Area	VOC	RetTime	Area	VOC	RetTime	Area	VOC	RetTime	Area	VOC	RetTime	Area	VOC
1	4.172	34932		4.174	33068		3.106	5271		3.345	10785		3.339	51955		3.336	92033	
2	5.481	8098	TCE	5.48	11395	TCE	3.343	6345		3.619	5646		3.612	25894		3.61	42769	
3	5.971	10733		5.971	8691		3.888	5166		4.164	36924		4.15	33070		4.139	31324	
4	7.552	69935		7.552	69872		4.164	32990		5.479	92505	TCE	5.477	455447	TCE	5.476	811382	TCE
5	7.932	5951		8.383	8634		5.479	50784	TCE	5.973	12505		5.972	13112		5.97	13634	
6	8.385	9271					5.972	12562		7.554	71206		7.553	78280		7.552	88678	
							7.553	75251		8.386	10520		8.385	9286		8.382	9699	
							7.934	5821										
							8.385	9732										
							8.656	5234										

TCE Area Count	8098	11395	50784	92505	455447	811382
50-1000ppb TCE Predict			48.99417	89.24476	439.3953	782.7857
TCE Actual	Conc (ppb): 5.16	Conc (ppb): 10.33	Conc (ppb 51.63	Conc (ppb): 103.3	Conc (ppb): 516.3	Conc (ppb): 1033
	CF: 1569.38	CF: 1103.098	CF: 983.6142	CF: 895.4985	CF: 882.1364	CF: 785.4618

AVG CF
1036.531

intercept	0
AVG CF	1036.531
Standard Deviation	115.4765
%RSD	11.14067

TCE Cal CK (100ppb) Area Count: 92505
Min Detection Area Count: 8098
Max Area Count: 811382

ORNL Environmental Sciences Divsion

G.C. Report

INITIAL CALIBRATION DATA

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 1/30/98

FileName	C:\HPCHEM\1\DATA\013098\001R0101.D		
Operator(s)	Cline/McCracken		
Instrument	ANALYZER1	**Vial No.**	1
ORNL No.	Blank	**Injection Number**	1
Analysis Date	30 Jan 98 04:01 PM	**Instrument Method**	INEELECD.MTH
Report Date	30 Jan 98 04:12 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	Hexane		
Dilution Factor	1		
Signal	0		

Pk#	RetTime	Area	VOC	G.C. Conc. (ug/L)	FLAG	Sample Conc. (ug/L)
1	4.162	35865				
2	4.813	7286				
3	4.897	11044				
4	5.965	13261				
5	7.546	70317				
6	7.926	6448				
7	8.378	9013				

ORNL Environmental Sciences Divsion

G.C. Report

INITIAL CALIBRATION DATA

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 1/30/98

FileName	C:\HPCHEM\1\DATA\013098\002R0101.D		
Operator(s)	Cline/McCracken		
Instrument	ANALYZER1	**Vial No.**	
ORNL No.	STD 1	**Injection Number**	
Analysis Date	30 Jan 98 04:12 PM	**Instrument Method**	
Report Date	30 Jan 98 04:24 PM	**Data Analysis Method**	
Sample Name	5 ppb VOCs		
Dilution Factor	1		
Signal	2		

Pk#	**RetTime**	**Area**	**VOC**	**G.C. Conc. (ug/L)**	**FLAG**	**Sample Conc. (ug/**
1	4.172	34932				
2	5.481	8098	TCE	NA	NA	NA
3	5.971	10733				
4	7.552	69935				
5	7.932	5951				
6	8.385	9271				

ORNL Environmental Sciences Divsion

G.C. Report

INITIAL CALIBRATION DATA

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 1/30/98

FileName	C:\HPCHEM\1\DATA\013098\003R0101.D		
Operator(s)	Cline/McCracken		
Instrument	ANALYZER1	**Vial No.**	3
ORNL No.	STD 2	**Injection Number**	1
Analysis Date	30 Jan 98 04:25 PM	**Instrument Method**	INEELECD.MTH
Report Date	30 Jan 98 04:37 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	10 ppb VOCs		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	G.C. Conc. (ug/L)	FLAG	Sample Conc. (ug/L)
1	4.174	33068				
2	5.48	11395	TCE	NA	NA	NA
3	5.971	8691				
4	7.552	69872				
5	8.383	8634				

ORNL Environmental Sciences Divsion

G.C. Report

INITIAL CALIBRATION DATA

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 1/30/98

FileName	C:\HPCHEM\1\DATA\013098\004R0101.D		
Operator(s)	Cline/McCracken		
Instrument	ANALYZER1	**Vial No.**	4
ORNL No.	STD 3	**Injection Number**	1
Analysis Date	30 Jan 98 04:38 PM	**Instrument Method**	INEELECD.MTH
Report Date	30 Jan 98 04:50 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	50 ppb VOCs		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	G.C. Conc. (ug/L)	FLAG	Sample Conc. (ug/L)
1	3.106	5271				
2	3.343	6345				
3	3.888	5166				
4	4.164	32990				
5	5.479	50784	TCE	NA	NA	NA
6	5.972	12562				
7	7.553	75251				
8	7.934	5821				
9	8.385	9732				
10	8.656	5234				

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G.C. Report

INITIAL CALIBRATION DATA

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 1/30/98

FileName	C:\HPCHEM\1\DATA\013098\005R0101.D		
Operator(s)	Cline/McCracken		
Instrument	ANALYZER1	**Vial No.**	5
ORNL No.	STD 4	**Injection Number**	1
Analysis Date	30 Jan 98 04:51 PM	**Instrument Method**	INEELECD.MTH
Report Date	30 Jan 98 05:03 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100 ppb VOCs		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	G.C. Conc. (ug/L)	FLAG	Sample Conc. (ug/L)
1	3.345	10785				
2	3.619	5646				
3	4.164	36924				
4	5.479	92505	TCE	NA	NA	NA
5	5.973	12505				
6	7.554	71206				
7	8.386	10520				

ORNL Environmental Sciences Divsion

G.C. Report

INITIAL CALIBRATION DATA

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 1/30/98

FileName	C:\HPCHEM\1\DATA\013098\006R0101.D		
Operator(s)	Cline/McCracken		
Instrument	ANALYZER1	**Vial No.**	6
ORNL No.	STD 5	**Injection Number**	1
Analysis Date	30 Jan 98 05:04 PM	**Instrument Method**	INEELECD.MTH
Report Date	30 Jan 98 05:16 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	500 ppb VOCs		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	G.C. Conc. (ug/L)	FLAG	Sample Conc. (ug/L)
1	3.339	51955				
2	3.612	25894				
3	4.15	33070				
4	5.477	455447	TCE	NA	NA	NA
5	5.972	13112				
6	7.553	78280				
7	8.385	9286				

ORNL Environmental Sciences Divsion

G.C. Report

INITIAL CALIBRATION DATA

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 1/30/98

FileName	C:\HPCHEM\1\DATA\013098\007R0101.D		
Operator(s)	Cline/McCracken		
Instrument	ANALYZER1	**Vial No.**	7
ORNL No.	STD 6	**Injection Number**	1
Analysis Date	30 Jan 98 05:17 PM	**Instrument Method**	INEELECD.MTH
Report Date	30 Jan 98 05:29 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	1000 ppb VOCs		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	G.C. Conc. (ug/L)	FLAG	Sample Conc. (ug/L)
1	3.336	92033				
2	3.61	42769				
3	4.139	31324				
4	5.476	811382	TCE	NA	NA	NA
5	5.97	13634				
6	7.552	88678				
7	8.382	9699				

ORNL Environmental Sciences Divsion

Initial G.C. Calibration Data

Date: 4/22/98

Instrument: Hewlett Packard 5890 Series II G.C.
Instrument Method INEELECD.MTH
Data Analysis Method INEELECD.MTH

Preparation Details: See Logbook, Page: 43
Supelco Custom Mix, LOT No. LA 73307

FileName	C:\HPCHEM\1\DATA\042298\00	C:\HPCHEM\1\DATA\042298\00	C:\HPCHEM\1\DATA\042298\	C:\HPCHEM\1\DATA\042298\0	C:\HPCHEM\1\DATA\042298\003	C:\HPCHEM\1\DATA\042298\002R0101.D
Operator(s)	MKMCCRACKEN	MKMCCRACKEN	MKMCCRACKEN	MKMCCRACKEN	MKMCCRACKEN	MKMCCRACKEN
Instrument	ANALYZER1	ANALYZER1	ANALYZER1	ANALYZER1	ANALYZER1	ANALYZER1
ORNL No.	std 6	std 5	std 4	std 3	std 2	std 1
Analysis Date	22 Apr 98 02:59 PM	22 Apr 98 02:46 PM	22 Apr 98 02:33 PM	22 Apr 98 02:20 PM	22 Apr 98 02:08 PM	22 Apr 98 01:55 PM
Report Date	22 Apr 98 03:11 PM	22 Apr 98 02:58 PM	22 Apr 98 02:46 PM	22 Apr 98 02:33 PM	22 Apr 98 02:20 PM	22 Apr 98 02:07 PM
Sample Name	5ppb std	10ppb std	50ppb std	100ppb std	500ppb std	1000ppb std
Dilution Factor	1	1	1	1	1	1
Signal	2	2	2	2	2	2

Pk#	RetTime	Area	VOC	RetTime	Area	VOC	RetTime	Area	VOC	RetTime	Area	VOC	RetTime	Area	VOC	RetTime	Area	VOC
1	3.439	15655		3.434	15953		3.431	16485		1.328	5698		3.363	68815		3.361	126171	
2	4.245	39081		4.241	38624		[illegible]	[illegible]		3.419	24350		[illegible]	[illegible]		[illegible]	[illegible]	
3	4.842	50193		4.843	44951		4.251	36271		[illegible]	[illegible]		4.244	38991		4.241	39765	
4	5.511	6519	TCE	5.51	11650	TCE	4.841	43804		4.255	41073		4.842	44050		4.841	42956	
5	6.002	12960		6.001	9893		5.507	61409	TCE	4.841	44274		5.507	539826	TCE	5.505	1029099	TCE
6	7.587	857935		7.585	889593		6.001	13081		5.507	126752	TCE	6.002	14554		6.001	9325	
	8.428	10983		8.426	10278		7.586	910063		6.001	11682		7.587	972625		7.585	877924	
							8.427	11360		7.585	841513		8.426	11712		8.425	9585	
										8.425	10058							
										8.656	5234							

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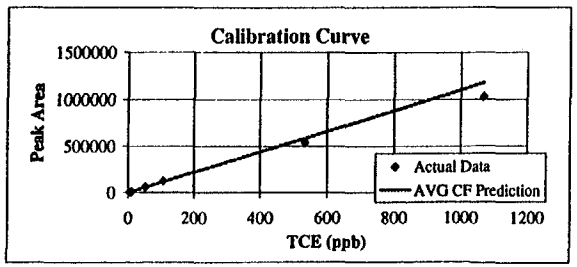
TCE Area Count	6519	11650	61409	126752	539826	1029099
TCE Actual (via Logbook)	Conc (ppb) 5.3 CF: 1230	Conc (ppb): 10.7 CF: 1088.785	Conc (ppb 53.4 CF: 1149.981	Conc (ppb) 107 CF: 1184.598	Conc (ppb) 534 CF: 1010.91	Conc (ppb) 1068 CF: 963.5758

AVG CF: 1104.642

Intercept	0
AVG CF	1104.642
Standard Deviation	103.0534
%RSD	9.329126

Per EPA Method 8000B, it is ok to use Avg. C.F.

TCE Cal CK (100ppb) Area Count:	126752	
Min Detection Area Count:	6519	5-1000 ppb Regression
Max Area Count:	1029099	5-1000 ppb Regression



ACTUAL:		5.3	%Diff		10.7	%Diff		53.4	%Diff		107	%Diff		534	%Diff		1068	%Diff
Predict via AVG CF	Conc (ppb)	5.9	-11.3%	Conc (ppb):	10.5	1.4%	Conc (ppb	55.6	-4.1%	Conc (ppb)	114.7	-7.2%	Conc (ppb)	488.7	8.5%	Conc (ppb)	931.6	12.8%

ORNL Environmental Sciences Divsion

G.C. Report

INITIAL CALIBRATION DATA

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\042298\001R0101.D		
Operator(s)	MKMCCRACKEN		
Instrument	ANALYZER1	**Vial No.**	1
ORNL No.	Blank	**Injection Number**	1
Analysis Date	22 Apr 98 01:44 PM	**Instrument Method**	INEELECD.MTH
Report Date	22 Apr 98 01:55 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	blank		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	G.C. Conc. (ug/L)	FLAG	Sample Conc. (ug/L)
1	3.241	9326	No I.D.			
2	3.43	16321	No I.D.			
3	3.93	8590	No I.D.			
4	4.184	40794	No I.D.			
5	4.84	68187	No I.D.			
6	5.994	18709	No I.D.			
7	7.584	852578	No I.D.			
8	8.424	10076	No I.D.			

ORNL Environmental Sciences Divsion

G.C. Report

INITIAL CALIBRATION DATA

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\042298\007R0101.D		
Operator(s)	MKMCCRACKEN		
Instrument	ANALYZER1	**Vial No.**	7
ORNL No.	std 6	**Injection Number**	1
Analysis Date	22 Apr 98 02:59 PM	**Instrument Method**	INEELECD.MTH
Report Date	22 Apr 98 03:11 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	5ppb std		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	G.C. Conc. (ug/L)	FLAG	Sample Conc. (ug/L)
1	3.439	15655	No I.D.			
2	4.245	39081	No I.D.			
3	4.842	50193	No I.D.			
4	5.511	6519	TCE	NA	NA	NA
5	6.002	12960	No I.D.			
6	7.587	857935	No I.D.			
7	8.428	10983	No I.D.			

ORNL Environmental Sciences Divsion

G.C. Report

INITIAL CALIBRATION DATA

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\042298\006R0101.D		
Operator(s)	MKMCCRACKEN		
Instrument	ANALYZER1	**Vial No.**	6
ORNL No.	std 5	**Injection Number**	1
Analysis Date	22 Apr 98 02:46 PM	**Instrument Method**	INEELECD.MTH
Report Date	22 Apr 98 02:58 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	10ppb std		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	G.C. Conc. (ug/L)	FLAG	Sample Conc. (ug/L)
1	3.434	15953	No I.D.			
2	4.241	38624	No I.D.			
3	4.843	44951	No I.D.			
4	5.51	11650	TCE	NA	NA	NA
5	6.001	9893	No I.D.			
6	7.585	889593	No I.D.			
7	8.426	10278	No I.D.			

ORNL Environmental Sciences Divsion

G.C. Report

INITIAL CALIBRATION DATA

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\042298\005R0101.D		
Operator(s)	MKMCCRACKEN		
Instrument	ANALYZER1	**Vial No.**	5
ORNL No.	std 4	**Injection Number**	1
Analysis Date	22 Apr 98 02:33 PM	**Instrument Method**	INEELECD.MTH
Report Date	22 Apr 98 02:46 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	50ppb std		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	G.C. Conc. (ug/L)	FLAG	Sample Conc. (ug/L)
1	3.431	16485	No I.D.			
2	3.613	5175	No I.D.			
3	4.251	36271	No I.D.			
4	4.841	43804	No I.D.			
5	5.507	61409	TCE	NA	NA	NA
6	6.001	13081	No I.D.			
7	7.586	910063	No I.D.			
8	8.427	11360	No I.D.			

ORNL Environmental Sciences Divsion

G.C. Report

INITIAL CALIBRATION DATA

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\042298\004R0101.D		
Operator(s)	MKMCCRACKEN		
Instrument	ANALYZER1	**Vial No.**	4
ORNL No.	std 3	**Injection Number**	1
Analysis Date	22 Apr 98 02:20 PM	**Instrument Method**	INEELECD.MTH
Report Date	22 Apr 98 02:33 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100ppb std		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	G.C. Conc. (ug/L)	FLAG	Sample Conc. (ug/L)
1	1.328	5698	No I.D.			
2	3.419	24350	No I.D.			
3	3.618	7400	No I.D.			
4	4.255	41073	No I.D.			
5	4.841	44274	No I.D.			
6	5.507	126752	TCE	NA	NA	NA
7	6.001	11682	No I.D.			
8	7.585	841513	No I.D.			
9	8.425	10058	No I.D.			
10	8.656	5234	No I.D.			

ORNL Environmental Sciences Divsion

G.C. Report

INITIAL CALIBRATION DATA

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\042298\003R0101.D		
Operator(s)	MKMCCRACKEN		
Instrument	ANALYZER1	**Vial No.**	3
ORNL No.	std 2	**Injection Number**	1
Analysis Date	22 Apr 98 02:08 PM	**Instrument Method**	INEELECD.MTH
Report Date	22 Apr 98 02:20 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	500ppb std		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	G.C. Conc. (ug/L)	FLAG	Sample Conc. (ug/L)
1	3.363	68815	No I.D.			
2	3.628	29724	No I.D.			
3	4.244	38991	No I.D.			
4	4.842	44050	No I.D.			
5	5.507	539826	TCE	NA	NA	NA
6	6.002	14554	No I.D.			
7	7.587	972625	No I.D.			
8	8.426	11712	No I.D.			

ORNL Environmental Sciences Divsion

G.C. Report

INITIAL CALIBRATION DATA

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\042298\002R0101.D		
Operator(s)	MKMCCRACKEN		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	std 1	**Injection Number**	1
Analysis Date	22 Apr 98 01:55 PM	**Instrument Method**	INEELECD.MTH
Report Date	22 Apr 98 02:07 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	1000ppb std		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	G.C. Conc. (ug/L)	FLAG	Sample Conc. (ug/L)
1	3.361	126171	No I.D.			
2	3.625	52545	No I.D.			
3	4.241	39765	No I.D.			
4	4.841	42956	No I.D.			
5	5.505	1029099	TCE	NA	NA	NA
6	6.001	9325	No I.D.			
7	7.585	877924	No I.D.			
8	8.425	9585	No I.D.			

ORNL Environmental Sciences Divsion

Initial G.C. Calibration Data

Date: **8/26/98**

Instrument: Hewlett Packard 5890 Series II G.C.--Lab 391
Instrument Method INEEL.MTH
Data Analysis Method INEEL.MTH

Preparation Details: See Logbook, Page: **128-129**
Supelco Custom Mix, LOT No. LA-77488

FileName	C:\HPCHEM\1\DATA\082698\I	C:\HPCHEM\1\DATA\082698\	C:\HPCHEM\1\DATA\082698\	C:\HPCHEM\1\DATA\082698\I	C:\HPCHEM\1\DATA\082698\IN	C:\HPCHEM\1\DATA\082698\INE00006.D
Operator(s)	SUE CARROLL	SUE CARROLL	SUE CARROLL	SUE CARROLL	SUE CARROLL	SUE CARROLL
Instrument	GC1	GC1	GC1	GC1	GC1	GC1
ORNL No.	std1	std2	std3	std4	std5	std6
Analysis Date	26 Aug 98 01:04 PM	26 Aug 98 01:23 PM	26 Aug 98 03:26 PM	26 Aug 98 02:31 PM	26 Aug 98 02:48 PM	26 Aug 98 03:07 PM
Report Date	27 Aug 98 11:57 AM	27 Aug 98 11:57 AM	27 Aug 98 11:58 AM	27 Aug 98 11:57 AM	27 Aug 98 11:55 AM	27 Aug 98 11:58 AM
Sample Name	5 ppb std	10 ppb std	50 ppb std	100 ppb std	500 ppb std	1000 ppb std
Dilution Factor	1	1	1	1	1	1
Signal	2	2	2	2	2	2

RetTime	Area		RetTime	Area		RetTime	Area		RetTime	Area		RetTime	Area		RetTime	Area	
2.097	1005		2.072	1253		1.907	16228		1.905	10577		1.904	8520		1.906	4647	
2.226	9540	1,1-DCE	2.232	11522	1,1-DC	1.237	27864	1,1-DCE	1.233	42056	1,1-DCE	2.231	146735	1,1-DCE	2.089	2064	
2.534	7954		2.536	8183		2.538	7595		2.534	6855		2.534	7854		2.231	242214	1,1-DCE
2.728	514		2.733	2189		2.737	4671		2.733	8273		2.732	24763		2.537	3606	
3.238	2778		3.241	2858		3.238	2710		3.234	2657		3.234	2575		2.735	39533	
3.398	2471		3.398	2466		3.489	3584		3.491	4463		3.499	15373		3.243	2281	
3.829	104073		3.832	89658		3.834	99910		3.828	84769		3.83	86896		3.504	24108	
4.065	9910		4.066	10068		4.068	9508		4.061	9053		4.067	11047		3.834	59934	
4.36	1202		4.367	1129		4.258	1293		4.249	291		4.259	1928		4.069	17207	
5.178	32478		5.18	35663		5.183	157151		5.176	278634		4.37	1870		4.244	2136	
7.227	3110		6.925	12206		7.944	128572		7.936	134258		5.181	1305279		5.181	3320539	
7.936	142197		7.564	25470		8.323	497		8.318	514		7.535	45308		5.808	792	
8.31	1278		7.939	137413		9.851	6132		9.815	7242		7.941	134702		6.747	10032	
8.82	7656		11.05	6595		10.838	3771		11.06	6415		8.83	1777		6.91	6565	
						11.069	1279					12.732	23458		7.538	27942	
															7.944	337447	

1,1-DCE

	STD1	STD2	STD3	STD4	STD5	STD 6
AREA COUNT	9540	11522	27864	42056	146735	242214
TCE Actual (via Logbook)	Conc (ppb 5.5	Conc (ppb) 10.8	Conc (pp 57.2	Conc (ppb 110.0	Conc (ppb 543.0	Conc (ppb 1027.8
	CF: 1750.383	CF: 1069.82	CF: 487.2835	CF: 382.3642	CF: 270.2192	CF: 235.6614

AVG CF: 699.2886

Intercept	0
AVG CF	**699.2886**
Standard Deviation	597.75086
%RSD	85.479857

Per EPA Method 8000B, CANNOT USE AVG CF

Cal CK (100ppb) Area Count:	**42056**	
Min Detection Area Count:	**11522**	10-1000 ppb Regression
Max Area Count:	**242214**	10-1000 ppb Regression

LINEAR REGRESSION

R Square	0.996203	10-1000 ppb Regression
INTERCEPT	15127.26	10-1000 ppb Regression
SLOPE	225.7329	10-1000 ppb Regression

	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
ACTUAL:	10.77003	57.18232	109.9894	543.022	1027.805
PREDICTED:	-15.9713	56.424	119.2947	583.0242	1005.998

ORNL Environmental Sciences Division

Initial G.C. Calibration Data

Date: 8/26/98

Instrument: Hewlett Packard 5890 Series II G.C.--Lab 391
Instrument Method INEEL.MTH
Data Analysis Method INEEL.MTH

Preparation Details: See Logbook, Page: 128-129
Supelco Custom Mix, LOT No. LA-77488

FileName	C:\HPCHEM\1\DATA\082698\IN	C:\HPCHEM\1\DATA\082698\I	C:\HPCHEM\1\DATA\082698\I	C:\HPCHEM\1\DATA\082698\IN	C:\HPCHEM\1\DATA\082698\INE0	C:\HPCHEM\1\DATA\082698\INE00006.D
Operator(s)	SUE CARROLL	SUE CARROLL	SUE CARROLL	SUE CARROLL	SUE CARROLL	SUE CARROLL
Instrument	GC1	GC1	GC1	GC1	GC1	GC1
ORNL No.	std1	std2	std3	std4	std5	std6
Analysis Date	26 Aug 98 01:04 PM	26 Aug 98 01:23 PM	26 Aug 98 03:26 PM	26 Aug 98 02:31 PM	26 Aug 98 02:48 PM	26 Aug 98 03:07 PM
Report Date	27 Aug 98 11:57 AM	27 Aug 98 11:57 AM	27 Aug 98 11:58 AM	27 Aug 98 11:57 AM	27 Aug 98 11:55 AM	27 Aug 98 11:58 AM
Sample Name	5 ppb std	10 ppb std	50 ppb std	100 ppb std	500 ppb std	1000 ppb std
Dilution Factor	1	1	1	1	1	1
Signal	2	2	2	2	2	2

RetTime	Area	RetTime	Area	RetTime	Area	RetTime	Area	RetTime	Area	RetTime	Area
2.097	1005	2.072	1253	1.907	16228	1.905	10577	1.904	8520	1.906	4647
2.226	9540	2.232	11522	2.237	27864	2.233	42056	2.231	146735	2.089	2064
2.534	7954	2.536	8183	2.538	7595	2.534	6855	2.534	7854	2.234	242214
2.728	514 TRANS-1	2.733	2189 TRANS-	2.737	4671 TRANS-1	2.733	8273 TRANS-1,	2.732	24763 TRANS-1,2	2.537	3606
3.238	2778	3.241	2858	3.238	2710	3.234	2657	3.234	2575	2.734	39533 TRANS-1,2 DCE
3.398	2471	3.398	2466	3.489	3584	3.491	4463	3.499	15373	3.243	2281
3.829	104073	3.832	89658	3.834	99910	3.828	84769	3.83	86896	3.504	24108
4.065	9910	4.066	10068	4.068	9508	4.061	9053	4.067	11047	3.834	59934
4.36	1202	4.367	1129	4.258	1293	4.249	291	4.259	1928	4.069	17207
5.178	32478	5.18	35663	5.183	157151	5.176	278634	4.37	1870	4.244	2136
7.227	3110	6.925	12206	7.944	128572	7.936	134258	5.181	1305279	5.181	3320539
7.936	142197	7.564	25470	8.323	497	8.318	514	7.535	45308	5.808	792
8.31	1278	7.939	137413	9.851	6132	9.815	7242	7.941	134702	6.747	10032
8.82	7656	11.05	6595	10.838	3771	11.06	6415	8.83	1777	6.91	6565
				11.069	1279			12.732	23458	7.538	27942
										7.944	337447

TRANS-1,2 DCE

	STD1	STD2	STD3	STD4	STD5	STD 6
AREA COUNT	514	2189	4671	8273	24763	39533
TCE Actual (via Logbook) Conc (ppb)	5.5	10.8	57.3	110.2	544.1	1029.8
CF:	94.12594	202.8572	81.52854	75.071292	45.514251	38.389326

AVG CF: 89.58109

Intercept	0
AVG CF	89.58109
Standard Deviation	59.481073
%RSD	66.399139

Per EPA Method 8000B, CANNOT USE AVG CF

Cal CK (100ppb) Area Count:	8273	
Min Detection Area Count:	2189	10-1000 ppb Regression
Max Area Count:	39533	10-1000 ppb Regression

LINEAR REGRESSION

R Square	0.992205	10-1000 ppb Regression
INTERCEPT	3148.6	10-1000 ppb Regression
SLOPE	36.34752	10-1000 ppb Regression

	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
ACTUAL:	10.79084	57.29282	110.20191	544.07135	1029.7915
PREDICTED:	-26.3994	41.88591	140.9848	594.6609	1001.016

ORNL Environmental Sciences Divsion

Initial G.C. Calibration Data

Date: 8/26/98

Instrument: Hewlett Packard 5890 Series II G.C.--Lab 391
Instrument Method INEEL.MTH
Data Analysis Method INEEL.MTH

Preparation Details: See Logbook, Page: 128-129
Supelco Custom Mix, LOT No. LA-77488

FileName	C:\HPCHEM\1\DATA\082698\IN	C:\HPCHEM\1\DATA\082698\I	C:\HPCHEM\1\DATA\082698\I	C:\HPCHEM\1\DATA\082698\IN	C:\HPCHEM\1\DATA\082698\INE0	C:\HPCHEM\1\DATA\082698\INE00006.D
Operator(s)	SUE CARROLL	SUE CARROLL	SUE CARROLL	SUE CARROLL	SUE CARROLL	SUE CARROLL
Instrument	GC1	GC1	GC1	GC1	GC1	GC1
ORNL No.	std1	std2	std3	std4	std5	std6
Analysis Date	26 Aug 98 01:04 PM	26 Aug 98 01:23 PM	26 Aug 98 03:26 PM	26 Aug 98 02:31 PM	26 Aug 98 02:48 PM	26 Aug 98 03:07 PM
Report Date	27 Aug 98 11:57 AM	27 Aug 98 11:57 AM	27 Aug 98 11:58 AM	27 Aug 98 11:57 AM	27 Aug 98 11:55 AM	27 Aug 98 11:58 AM
Sample Name	5 ppb std	10 ppb std	50 ppb std	100 ppb std	500 ppb std	1000 ppb std
Dilution Factor	1	1	1	1	1	1
Signal	2	2	2	2	2	2

RetTime	Area		RetTime	Area		RetTime	Area		RetTime	Area		RetTime	Area		RetTime	Area	
2.097	1005		2.072	1253		1.907	16228		1.905	10577		1.904	8520		1.906	4647	
2.226	9540		2.232	11522		2.237	27864		2.233	42056		2.231	146735		2.089	2064	
2.534	7954		2.536	8183		2.538	7595		2.534	6855		2.534	7854		2.234	242214	
2.728	514		2.733	2189		2.737	4671		2.733	8273		2.732	24763		2.537	3606	
3.238	2778		3.241	2858		3.238	2710		3.234	2657		3.234	2575		2.735	39533	
3.398	2471	CIS-1,2	3.398	2466	CIS-1,2	3.489	3584	CIS-1,2	3.491	4463	CIS-1,2 D	3.499	15373	CIS-1,2 DC	3.243	2281	
3.829	104073		3.832	89658		3.834	99910		3.828	84769		3.83	86896		3.304	24108	CIS-1,2 DCE
4.065	9910		4.066	10068		4.068	9508		4.061	9053		4.067	11047		3.834	59934	
4.36	1202		4.367	1129		4.258	1293		4.249	291		4.259	1928		4.069	17207	
5.178	32478		5.18	35663		5.183	157151		5.176	278634		4.37	1870		4.244	2136	
7.227	3110		6.925	12206		7.944	128572		7.936	134258		5.181	1305279		5.181	3320539	
7.936	142197		7.564	25470		8.323	497		8.318	514		7.535	45308		5.808	792	
8.31	1278		7.939	137413		9.851	6132		9.815	7242		7.941	134702		6.747	10032	
8.82	7656		11.05	6595		10.838	3771		11.06	6415		8.83	1777		6.91	6565	
						11.069	1279					12.732	23458		7.538	27942	
															7.944	337447	

CIS-1,2 DCE

	STD1	STD2	STD3	STD4	STD5	STD 6
AREA COUNT	2471	2466	3584	4463	15373	24108

TCE Actual	Conc (ppb)	5.5	Conc (ppb)	10.8	Conc (ppb	57.2	Conc (ppb	110.1	Conc (ppb	543.5	Conc (ppb	1028.8		
(via Logbook)	CF:	452.93716	CF:	228.7477	CF:	62.61622	CF:	40.537481	CF:	28.282759	CF:	23.433162	AVG CF:	139.4257

Intercept	0
AVG CF	139.42574
Standard Deviation	171.90314
%RSD	123.29369

Per EPA Method 8000B, CANNOT USE AVG CF

Cal CK (100ppb) Area Count:	4463	
Min Detection Area Count:	2466	10-1000 ppb Regression
Max Area Count:	24108	10-1000 ppb Regression

LINEAR REGRESSION		
R Square	0.994658	10-1000 ppb Regression
INTERCEPT	2419.7	10-1000 ppb Regression
SLOPE	21.6	10-1000 ppb Regression

	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
ACTUAL:	10.78044	57.23757	110.09564	543.54669	1028.7984
PREDICTED:	2.140582	53.78265	94.38498	598.334	1001.817

ORNL Environmental Sciences Divsion

Initial G.C. Calibration Data

Date: **8/26/98**

Instrument: Hewlett Packard 5890 Series II G.C.--Lab 391
Instrument Method INEEL.MTH
Data Analysis Method INEEL.MTH

Preparation Details: See Logbook, Page: **128-129**
Supelco Custom Mix, LOT No. LA-77488

FileName	C:\HPCHEM\1\DATA\082698\I	C:\HPCHEM\1\DATA\082698\IN	C:\HPCHEM\1\DATA\082698\I	C:\HPCHEM\1\DATA\082698\IN	C:\HPCHEM\1\DATA\082698\INE	C:\HPCHEM\1\DATA\082698\INE00006.D
Operator(s)	SUE CARROLL	SUE CARROLL	SUE CARROLL	SUE CARROLL	SUE CARROLL	SUE CARROLL
Instrument	GC1	GC1	GC1	GC1	GC1	GC1
ORNL No.	std1	std2	std3	std4	std5	std6
Analysis Date	26 Aug 98 01:04 PM	26 Aug 98 01:23 PM	26 Aug 98 03:26 PM	26 Aug 98 02:31 PM	26 Aug 98 02:48 PM	26 Aug 98 03:07 PM
Report Date	27 Aug 98 11:57 AM	27 Aug 98 11:57 AM	27 Aug 98 11:58 AM	27 Aug 98 11:57 AM	27 Aug 98 11:55 AM	27 Aug 98 11:58 AM
Sample Name	*5 ppb std*	*10 ppb std*	*50 ppb std*	*100 ppb std*	*500 ppb std*	*1000 ppb std*
Dilution Factor	1	1	1	1	1	1
Signal	2	2	2	2	2	2

RetTime	Area		RetTime	Area		RetTime	Area		RetTime	Area		RetTime	Area		RetTime	Area	
2.097	1005		2.072	1253		1.907	16228		1.905	10577		1.904	8520		1.906	4647	
2.226	9540		2.232	11522		2.237	27864		2.233	42056		2.231	146735		2.089	2064	
2.534	7954		2.536	8183		2.538	7595		2.534	6855		2.534	7854		2.234	242214	
2.728	514		2.733	2189		2.737	4671		2.733	8273		2.732	24763		2.537	3606	
3.238	2778		3.241	2858		3.238	2710		3.234	2657		3.234	2575		2.735	39533	
3.398	2471		3.398	2466		3.489	3584		3.491	4463		3.499	15373		3.243	2281	
3.829	104073		3.832	89658		3.834	99910		3.828	84769		3.83	86896		3.504	24108	
4.065	9910		4.066	10068		4.068	9508		4.061	9053		4.067	11047		3.834	59934	
4.36	1202		4.367	1129		4.258	1293		4.249	291		4.259	1928		4.069	17207	
5.176	32478	TCE	5.18	35663	TCE	5.183	157151	TCE	5.176	278634	TCE	4.37	1870		4.244	2136	
7.227	3110		6.925	12206		7.944	128572		7.936	134258		5.181	1305279	TCE	5.181	3320539	TCE
7.936	142197		7.564	25470		8.323	497		8.318	514		7.535	45308		5.808	792	
8.31	1278		7.939	137413		9.851	6132		9.815	7242		7.941	134702		6.747	10032	
8.82	7656		11.05	6595		10.838	3771		11.06	6415		8.83	1777		6.91	6565	
						11.069	1279					12.732	23458		7.538	27942	
															7.944	337447	

TCE	STD1	STD2	STD3	STD4	STD5	STD6
AREA COUNT	32478	35663	157151	278634	1305279	3320539

TCE Actual	Conc (ppb):	Conc (ppb)	10.8	Conc (ppb	57.3	Conc (ppb	110.2	Conc (ppb	544.1	Conc (ppb	1029.8	
(via Logbook)	CF:	CF:	3304.932	CF:	2742.944	CF:	2528.3953	CF:	2399.0952	CF:	3224.4771	AVG CF: 2839.969

Intercept	0
AVG CF	**2839.969**
Standard Deviation	407.70656
%RSD	14.356023

Per EPA Method 8000B, it is ok to use Avg. C.F.

Cal CK (100ppb) Area Count:	**278634**
Min Detection Area Count:	**35663** 10-1000 ppb Regression
Max Area Count:	**3320539** 10-1000 ppb Regression

	(ppb)		(ppb)		(ppb)		(ppb)		(ppb)	
ACTUAL:	10.79	%Diff	57.29	%Diff	110.20	%Diff	544.07	%Diff	1029.79	%Diff
Predict via AVG CF	12.56	-16%	55.34	3%	98.11	11%	459.61	16%	1169.22	-14%

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G.C. Report

INITIAL CALIBRATION DATA

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 8/26/98

FileName	C:\HPCHEM\1\DATA\082698\INE00000.D		
Operator(s)	SUE CARROLL		
Instrument	GC1	**Vial No.**	1
ORNL No.	blank	**Injection Number**	1
Analysis Date	26 Aug 98 12:45 PM	**Instrument Method**	INEEL.MTH
Report Date	27 Aug 98 11:57 AM	**Data Analysis Method**	INEEL.MTH
Sample Name	hexane		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	G.C. Conc. (ug/L)	FLAG	Sample Conc. (ug/L)
1	0.14	8			
2	0.241	6			
3	0.3	16			
4	0.366	3			
5	0.416	31			
6	0.526	3			
7	0.604	9.6			
8	0.66	3			
9	1.067	194			
10	1.182	4829			
11	1.434	3011			
12	1.905	8983			
13	2.219	9123			
14	2.532	6095			
15	3.228	2580			
16	3.39	2470			
17	3.826	74759			
18	4.057	7742			
19	4.239	558			
20	7.928	113191			
21	8.293	525			
22	9.808	6621			
23	10.786	4293			
24	11.047	1736			
25	11.398	2086			
26	12.275	3565			
27	12.723	19916			
28	13.197	26094			
29	13.388	25233			
30	13.838	123899			
31	14.33	17662			
32	14.646	5403			
33	14.826	7190			

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G.C. Report

INITIAL CALIBRATION DATA

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 8/26/98

FileName	C:\HPCHEM\1\DATA\082698\INE00001.D		
Operator(s)	SUE CARROLL		
Instrument	GC1	**Vial No.**	2
ORNL No.	std1	**Injection Number**	1
Analysis Date	26 Aug 98 01:04 PM	**Instrument Method**	INEEL.MTH
Report Date	27 Aug 98 11:57 AM	**Data Analysis Method**	INEEL.MTH
Sample Name	5 ppb std		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	G.C. Conc. (ug/L)	FLAG	Sample Conc. (ug/L)
1	0.243	7			
2	0.273	13			
3	0.35	8			
4	0.401	6			
5	0.58	4			
6	0.656	12			
7	0.785	27			
8	0.949	7			
9	0.981	14			
10	1.18	6858			
11	1.409	11640			
12	1.905	14017			
13	2.097	1005			
14	2.226	9540			
15	2.534	7954			
16	2.728	514			
17	3.238	2778			
18	3.398	2471			
19	3.829	104073			
20	4.065	9910			
21	4.36	1202			
22	5.178	32478			
23	7.227	3110			
24	7.936	142197			
25	8.31	1278			
26	8.82	7656			
27	9.081	3535			
28	9.767	12120			
29	10.184	3088			
30	10.785	4926			
31	11.054	1801			
32	11.942	5438			
33	12.279	1476			
34	12.728	21380			
35	13.202	21102			
36	13.393	17735			
37	13.571	915			
38	13.842	78450			
39	14.333	11102			
40	14.657	3804			
41	14.833	6508			

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G.C. Report

INITIAL CALIBRATION DATA

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 8/26/98

FileName	C:\HPCHEM\1\DATA\082698\INE00002.D		
Operator(s)	SUE CARROLL		
Instrument	GC1	**Vial No.**	3
ORNL No.	std2	**Injection Number**	1
Analysis Date	26 Aug 98 01:23 PM	**Instrument Method**	INEEL.MTH
Report Date	27 Aug 98 11:57 AM	**Data Analysis Method**	INEEL.MTH
Sample Name	10 ppb std		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	G.C. Conc. (ug/L)	FLAG	Sample Conc. (ug/L)
1	0.205	4			
2	0.243	13			
3	0.389	39			
4	0.463	9.6			
5	0.631	6			
6	0.706	5			
7	0.778	7			
8	0.827	5			
9	0.888	1			
10	0.927	14			
11	1.015	25			
12	1.18	6721			
13	1.411	13148			
14	1.768	3009			
15	1.907	9251			
16	2.072	1253			
17	2.232	11522			
18	2.536	8183			
19	2.733	2189			
20	3.241	2858			
21	3.398	2466			
22	3.832	89658			
23	4.066	10068			
24	4.367	1129			
25	5.18	35663			
26	6.925	12206			
27	7.564	25470			
28	7.939	137413			
29	11.05	6595			
30	12.283	4921			
31	12.73	21693			
32	13.203	26351			
33	13.394	19088			
34	13.844	78728			
35	14.334	11733			
36	14.66	4093			
37	14.827	3543			

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G.C. Report

INITIAL CALIBRATION DATA

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 8/26/98

FileName	C:\HPCHEM\1\DATA\082698\INE00007.D		
Operator(s)	SUE CARROLL		
Instrument	GC1	**Vial No.**	8
ORNL No.	std3	**Injection Number**	0
Analysis Date	26 Aug 98 03:26 PM	**Instrument Method**	INEEL.MTH
Report Date	27 Aug 98 11:58 AM	**Data Analysis Method**	INEEL.MTH
Sample Name	50 ppb std		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	G.C. Conc. (ug/L)	FLAG	Sample Conc. (ug/L)
1	0.275	7			
2	0.341	5			
3	0.408	5			
4	0.438	11			
5	0.613	7			
6	0.673	9			
7	0.79	5			
8	0.854	9			
9	0.971	16			
10	1.093	35			
11	1.178	7063			
12	1.41	29625			
13	1.907	16228			
14	2.237	27864			
15	2.538	7595			
16	2.737	4671			
17	3.238	2710			
18	3.489	3584			
19	3.834	99910			
20	4.068	9508			
21	4.258	1293			
22	5.183	157151			
23	7.944	128572			
24	8.323	497			
25	9.851	6132			
26	10.838	3771			
27	11.069	1279			
28	12.29	3606			
29	12.735	25135			
30	13.208	24110			
31	13.398	19828			
32	13.563	1295			
33	13.846	80249			
34	14.351	13775			
35	14.853	32554			
36	14.66	4093			
37	14.827	3543			

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G.C. Report

INITIAL CALIBRATION DATA

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 8/26/98

FileName	C:\HPCHEM\1\DATA\082698\INE00004.D		
Operator(s)	SUE CARROLL		
Instrument	GC1	**Vial No.**	5
ORNL No.	std4	**Injection Number**	1
Analysis Date	26 Aug 98 02:31 PM	**Instrument Method**	INEEL.MTH
Report Date	27 Aug 98 11:57 AM	**Data Analysis Method**	INEEL.MTH
Sample Name	100 ppb std		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	G.C. Conc. (ug/L)	FLAG	Sample Conc. (ug/L)
1	0.212	37			
2	0.438	7			
3	0.528	1			
4	0.575	8			
5	0.631	77			
6	0.805	-1			
7	0.883	34			
8	0.991	15			
9	1.053	21			
10	1.179	6436			
11	1.411	14493			
12	1.707	3087			
13	1.905	10577			
14	2.233	42056			
15	2.534	6855			
16	2.733	8273			
17	3.234	2657			
18	3.491	4463			
19	3.828	84769			
20	4.061	9053			
21	4.249	291			
22	5.176	278634			
23	7.936	134258			
24	8.318	514			
25	9.815	7242			
26	11.06	6415			
27	12.729	37140			
28	13.204	20987			
29	13.395	18396			
30	13.843	76506			
31	14.349	13164			
32	14.68	29826			

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G.C. Report

INITIAL CALIBRATION DATA

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 8/26/98

FileName	C:\HPCHEM\1\DATA\082698\INE00005.D		
Operator(s)	SUE CARROLL		
Instrument	GC1	**Vial No.**	6
ORNL No.	std5	**Injection Number**	1
Analysis Date	26 Aug 98 02:48 PM	**Instrument Method**	INEEL.MTH
Report Date	27 Aug 98 11:55 AM	**Data Analysis Method**	INEEL.MTH
Sample Name	500 ppb std		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	G.C. Conc. (ug/L)	FLAG	Sample Conc. (ug/L)
1	0.283	6			
2	0.311	23			
3	0.498	71			
4	0.665	2			
5	0.82	9			
6	0.968	2			
7	1.003	6			
8	1.088	9			
9	1.178	6040			
10	1.408	19501			
11	1.749	2367			
12	1.904	8520			
13	2.231	146735			
14	2.534	7854			
15	2.732	24763			
16	3.234	2575			
17	3.499	15373			
18	3.83	86896			
19	4.067	11047			
20	4.259	1928			
21	4.37	1870			
22	5.181	1305279			
23	7.535	45308			
24	7.941	134702			
25	8.83	1777			
26	12.732	23458			
27	13.205	27080			
28	13.397	18093			
29	13.567	890			
30	13.844	76265			
31	14.351	9624			
32	14.67	26185			
33	14.816	17177			

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G.C. Report

INITIAL CALIBRATION DATA

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 8/26/98

FileName	C:\HPCHEM\1\DATA\082698\INE00006.D		
Operator(s)	SUE CARROLL		
Instrument	GC1	**Vial No.**	7
ORNL No.	std6	**Injection Number**	1
Analysis Date	26 Aug 98 03:07 PM	**Instrument Method**	INEEL.MTH
Report Date	27 Aug 98 11:58 AM	**Data Analysis Method**	INEEL.MTH
Sample Name	1000 ppb std		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	G.C. Conc. (ug/L)	FLAG	Sample Conc. (ug/L)
1	0.358	3			
2	0.43	6			
3	0.496	6			
4	0.53	9			
5	0.688	6			
6	0.76	5			
7	0.873	11			
8	0.947	7			
9	1.181	6677			
10	1.41	14562			
11	1.663	3530			
12	1.906	4647			
13	2.089	2064			
14	2.234	242214			
15	2.537	3606			
16	2.735	39533			
17	3.243	2281			
18	3.504	24108			
19	3.834	59934			
20	4.069	17207			
21	4.244	2136			
22	5.181	3320539			
23	5.808	792			
24	6.747	10032			
25	6.91	6565			
26	7.538	27942			
27	7.944	337447			
28	10.798	4586			
29	11.059	1045			
30	11.466	1967			
31	12.288	2213			
32	12.731	69059			
33	13.204	91941			
34	13.395	82267			
35	13.845	318775			
36	14.347	68316			
37	14.661	19489			
38	14.833	41149			

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G.C. Report-Retention Time Window

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 1/30/98

FileName	C:\HPCHEM\1\DATA\021698\002R0101.D		
Operator(s)	SR Cline		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	RT WINDOW CHK#1	**Injection Number**	1
Analysis Date	16 Feb 98 08:40 AM	**Instrument Method**	INEELECD.MTH
Report Date	16 Feb 98 08:52 AM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100 ppb std		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	3.066	7857			
2	3.351	11701			
3	3.621	5233			
4	3.884	5544			
5	4.173	36179			
6	5.486	93419	TCE	-0.99%	90.13
7	5.977	9060			
8	7.56	71844			
9	7.94	6933			
10	8.393	10459			

Retention Time Windows			
3 Std Dev. from the Mean Absolute RT:		0.03	Minutes
VOC	Minimum RT	Maximum RT	
Vinyl Chloride			
Cis-1,2 DCE			
Trans-1,2 DCE			
TCE	5.46	5.52	

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G.C. Report-Retention Time Window

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 1/30/98

FileName	C:\HPCHEM\1\DATA\021798\002R0101.D		
Operator(s)	SR Cline		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	RT WINDOW CHK#1	**Injection Number**	1
Analysis Date	17 Feb 98 04:20 PM	**Instrument Method**	INEELECD.MTH
Report Date	17 Feb 98 04:33 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100 ppb std		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	3.057	6763			
2	3.356	12016			
3	4.172	33194			
4	5.491	94855	TCE	-2.54%	91.51
5	5.982	10564			
6	7.567	73882			
7	7.947	7140			
8	8.401	10594			

Retention Time Windows			
3 Std Dev. from the Mean Absolute RT:		0.03	Minutes
VOC	Minimum RT	Maximum RT	
Vinyl Chloride			
Cis-1,2 DCE			
Trans-1,2 DCE			
TCE	7.54	7.60	

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G.C. Report-Retention Time Window

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 1/30/98

FileName	C:\HPCHEM\1\DATA\021898\002R0101.D		
Operator(s)	SR Cline		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	RT WINDOW CHK#1	**Injection Number**	1
Analysis Date	18 Feb 98 04:38 PM	**Instrument Method**	INEELECD.MTH
Report Date	18 Feb 98 04:51 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100 ppb std		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	3.053	5400			
2	3.356	11528			
3	4.175	32376			
4	5.49	93567	TCE	-1.15%	90.27
5	5.982	9806			
6	7.565	74753			
7	7.946	7692			
8	8.399	8789			

Retention Time Windows			
3 Std Dev. from the Mean Absolute RT:		0.03	Minutes
VOC	Minimum RT	Maximum RT	
Vinyl Chloride			
Cis-1,2 DCE			
Trans-1,2 DCE			
TCE	7.54	7.60	

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Retention Time Windows Summary

Per EPA SW486 Method 8000B

Injection of the same 100 ppb check standard was performed within a 72 hr period

Actual Time between the three injections: ***56.0 hours***

Calibration Curve Date: 1/30/98

VOC	RT#1	RT#2	RT#3	Mean Abs. RT	Std Dev	RT Window Width
Vinyl Chloride						
Cis-1,2 DCE						
Trans-1,2 DCE						
TCE	5.486	5.491	5.490	5.489	0.0026458	0.01

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G.C. Report-Retention Time Window

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 8/26/98

FileName	C:\HPCHEM\1\DATA\082698\INE00005.D		
Operator(s)	SUE CARROLL		
Instrument	GC1	**Vial No.**	6
ORNL No.	std5	**Injection Number**	1
Analysis Date	26 Aug 98 02:48 PM	**Instrument Method**	INEEL.MTH
Report Date	27 Aug 98 11:55 AM	**Data Analysis Method**	INEEL.MTH
Sample Name	500 ppb std		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	Conc. (ug/L)
1	0.283	6	
2	0.311	23	
3	0.498	71	
4	0.665	2	
5	0.82	9	
6	0.968	2	
7	1.003	6	
8	1.088	9	
9	1.178	6040	
10	1.408	19501	
11	1.749	2367	
12	1.904	8520	
13	2.231	146735	1,1 DCE
14	2.534	7854	
15	2.732	24763	Trans-1,2 DCE
16	3.234	2575	
17	3.499	15373	Cis-1,2 DCE
18	3.83	86896	
19	4.067	11047	
20	4.259	1928	
21	4.37	1870	
22	5.181	1305279	TCE
23	7.535	45308	

Retention Time Windows			
3 Std Dev. from the Mean Absolute RT:		0.03	Minutes
VOC	Minimum RT	Maximum RT	
1,1 DCE	2.201	2.261	
Trans-1,2 DCE	2.702	2.762	
Cis-1,2 DCE	3.469	3.529	
TCE	5.151	5.211	

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G.C. Report-Retention Time Window

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 8/26/98

FileName	C:\HPCHEM\1\DATA\082798\INE00001.D		
Operator(s)	SUE CARROLL		
Instrument	GC1	**Vial No.**	2
ORNL No.	500 PPB/A	**Injection Number**	1
Analysis Date	27 Aug 98 09:10 AM	**Instrument Method**	INEEL.MTH
Report Date	27 Aug 98 09:28 AM	**Data Analysis Method**	INEEL.MTH
Sample Name	00 ppb RT check		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	0.273	5			
2	0.485	7			
3	0.875	396			
4	0.943	403			
5	1.076	459			
6	1.176	4037			
7	1.287	1240			
8	1.407	15614			
9	1.751	2939			
10	1.902	8474			
11	2.23	147221	1,1 DCE		
12	2.531	8014			
13	2.729	25065	Trans-1,2 DCE		
14	3.236	2587			
15	3.497	15431	Cis-1,2 DCE		
16	3.826	86143			
17	4.056	10635			
18	4.249	3529			
19	5.167	1300091	TCE		
20	6.849	1357			
21	7.234	3323			
22	7.924	138690			
23	8.301	1166			

Retention Time Windows			
3 Std Dev. from the Mean Absolute RT:		0.03	Minutes
VOC	Minimum RT	Maximum RT	
1,1 DCE	2.200	2.260	
Trans-1,2 DCE	2.699	2.759	
Cis-1,2 DCE	3.467	3.527	
TCE	5.137	5.197	

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G.C. Report-Retention Time Window

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 8/26/98

FileName	C:\HPCHEM\1\DATA\82898\002R0101.D		
Operator(s)	steve cline		
Instrument	GC1	**Vial No.**	2
ORNL No.	RT Check	**Injection Number**	1
Analysis Date	28 Aug 98 07:49 AM	**Instrument Method**	INEEL.MTH
Report Date	28 Aug 98 08:07 AM	**Data Analysis Method**	INEEL.MTH
Sample Name	500 ppb std		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	
1	0.181	5	
2	0.274	25	
3	0.347	20	
4	0.503	19	
5	0.605	12	
6	0.679	1	
7	0.781	5	
8	0.855	14	
9	0.92	7	
10	1.006	26	
11	1.182	3919	
12	1.294	909	
13	1.413	13731	
14	1.753	2268	
15	1.906	8156	
16	2.233	149640	1,1 DCE
17	2.533	7906	
18	2.731	25531	Trans-1,2 DCE
19	3.237	2310	
20	3.498	15067	Cis-1,2 DCE
21	3.827	86200	
22	4.059	9098	
23	4.253	922	
24	5.171	1341396	TCE
25	7.927	141365	

Retention Time Windows			
3 Std Dev. from the Mean Absolute RT:		0.03	Minutes
VOC	Minimum RT	Maximum RT	
1,1 DCE	2.203	2.263	
Trans-1,2 DCE	2.701	2.761	
Cis-1,2 DCE	3.468	3.528	
TCE	5.141	5.201	

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Retention Time Windows Summary

Per EPA SW486 Method 8000B

Injection of the same 500 ppb check standard was performed within a 72 hr period

Actual Time between the three injections: ***41.0 hours***

Calibration Curve Date: 8/26/98

VOC	RT#1	RT#2	RT#3	Mean Abs. RT	Std Dev	RT Window Width
1,1 DCE	2.231	2.230	2.233	2.231	0.002	0.005
Trans-1,2 DCE	2.732	2.729	2.731	2.731	0.002	0.005
Cis-1,2 DCE	3.499	3.497	3.498	3.498	0.001	0.003
TCE	5.181	5.167	5.171	5.173	0.007	0.022

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 1/30/98

FileName	C:\HPCHEM\1\DATA\013098\005R0501.D		
Operator(s)	Cline/McCracken		
Instrument	ANALYZER1	**Vial No.**	5
ORNL No.	STD 4	**Injection Number**	1
Analysis Date	30 Jan 98 08:44 PM	**Instrument Method**	INEELECD.MTH
Report Date	30 Jan 98 08:56 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100 ppb VOCs		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	3.346	10639			
2	3.634	6127			
3	4.167	37809			
4	5.481	92669	TCE	-0.18%	89.40
5	5.975	12641			
6	7.556	67291			
7	8.389	9826			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.481	0.01	5.473	5.489

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 1/30/98

FileName	C:\HPCHEM\1\DATA\013098\005R1101.D		
Operator(s)	Cline/McCracken		
Instrument	ANALYZER1	**Vial No.**	5
ORNL No.	STD 4	**Injection Number**	1
Analysis Date	31 Jan 98 03:12 AM	**Instrument Method**	INEELECD.MTH
Report Date	31 Jan 98 03:25 AM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100 ppb VOCs		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	3.344	10162			
2	3.637	5674			
3	3.884	5253			
4	4.165	37232			
5	5.48	92417	TCE	0.10%	89.16
6	5.973	13212			
7	7.554	73655			
8	8.387	9210			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.48	0.01	5.472	5.488

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 1/30/98

FileName	C:\HPCHEM\1\DATA\020298\002R0101.D		
Operator(s)	SR Cline		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	Cal. Check	**Injection Number**	1
Analysis Date	02 Feb 98 04:05 PM	**Instrument Method**	INEELECD.MTH
Report Date	02 Feb 98 04:18 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100 ppb std		
Dilution Factor	1		
Signal	0		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
0	0	0			
1	3.066	5005			
2	3.346	11849			
3	3.618	5682			
4	3.893	6275			
5	4.167	37517			
6	5.483	92607	TCE	-0.11%	89.34
7	5.975	12132			
8	7.557	68002			
9	7.938	5550			
10	8.39	10344			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.483	0.01	5.475	5.491

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 1/30/98

FileName	C:\HPCHEM\1\DATA\020298\002R0201.D		
Operator(s)	SR Cline		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	Cal. Check	**Injection Number**	1
Analysis Date	02 Feb 98 04:57 PM	**Instrument Method**	INEEL2.MTH
Report Date	02 Feb 98 05:14 PM	**Data Analysis Method**	INEEL2.MTH
Sample Name	100 ppb std		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	3.365	11846			
2	3.599	3211			
3	4.159	33529			
4	4.538	2648			
5	4.806	2800			
6	5.468	101423	TCE	-9.64%	97.85
7	7.543	79726			
8	7.92	7592			
9	8.435	4091			

)ifferent Method Employed!!

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.468	0.01	5.460	5.476

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 1/30/98

FileName	C:\HPCHEM\1\DATA\020298\002R0201.D		
Operator(s)	SR Cline		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	Cal. Check	**Injection Number**	1
Analysis Date	2/19/98 4:58 PM	**Instrument Method**	INEELECD.MTH
Report Date	2/19/98 5:11 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100 ppb std		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
4	5.488	95635	TCE	-3.38%	92.26

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.488	0.01	5.480	5.496

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 1/30/98

FileName	C:\HPCHEM\1\DATA\020298\002R0201.D		
Operator(s)	SR Cline		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	Cal. Check	**Injection Number**	1
Analysis Date	2/20/98 6:33 AM	**Instrument Method**	INEELECD.MTH
Report Date	2/20/98 6:46 AM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100 ppb std		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
4	5.492	95202	TCE	-2.92%	91.85

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.492	0.01	5.484	5.500

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 1/30/98

FileName	C:\HPCHEM\1\DATA\021998\002R0101.D		
Operator(s)	SR Cline		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	100PPB STD	**Injection Number**	1
Analysis Date	20 Feb 98 04:49 PM	**Instrument Method**	INEELECD.MTH
Report Date	20 Feb 98 05:02 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100 ppb std		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
3	5.491	93837	TCE	-1.44%	90.53

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.491	0.01	5.483	5.499

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 1/30/98

FileName	C:\HPCHEM\1\DATA\031298\002R0101.D		
Operator(s)	MKMCCRACKEN		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	100PPB STD	**Injection Number**	1
Analysis Date	01 Mar 98 11:17 AM	**Instrument Method**	INEELECD.MTH
Report Date	01 Mar 98 11:29 AM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100 ppb std		
Dilution Factor	1		
Signal	0		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
3	5.475	92093	TCE	0.45%	88.85

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.475	0.01	5.467	5.483

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 1/30/98

FileName	C:\HPCHEM\1\DATA\031298\002R0901.D		
Operator(s)	MKMCCRACKEN		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	100PPB STD	**Injection Number**	1
Analysis Date	01 Mar 98 08:07 PM	**Instrument Method**	INEELECD.MTH
Report Date	01 Mar 98 08:20 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100 ppb std		
Dilution Factor	1		
Signal	0		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
4	5.477	94517	TCE	-2.18%	91.19

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.477	0.01	5.469	5.485

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 1/30/98

FileName	C:\HPCHEM\1\DATA\031998\002R0101.D		
Operator(s)	MKMCCRACKEN		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	100PPB STD	**Injection Number**	1
Analysis Date	06 Mar 98 03:53 PM	**Instrument Method**	INEELECD.MTH
Report Date	06 Mar 98 04:05 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100 ppb std		
Dilution Factor	1		
Signal	0		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
4	5.501	95468	TCE	-3.20%	92.10

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.501	0.01	5.493	5.509

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 1/30/98

FileName	C:\HPCHEM\1\DATA\031998\002R0901.D		
Operator(s)	MKMCCRACKEN		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	100PPB STD	**Injection Number**	1
Analysis Date	07 Mar 98 01:24 AM	**Instrument Method**	INEELECD.MTH
Report Date	07 Mar 98 01:37 AM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100 ppb std		
Dilution Factor	1		
Signal	0		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
4	5.504	94794	TCE	-2.47%	91.45

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.504	0.01	5.496	5.512

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 1/30/98

FileName	C:\HPCHEM\1\DATA\032698\002R0101.D		
Operator(s)	MKMCCRACKEN		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	100PPB STD	**Injection Number**	1
Analysis Date	13 Mar 98 04:51 PM	**Instrument Method**	INEELECD.MTH
Report Date	13 Mar 98 05:03 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100 ppb std		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	3.363	12352			
2	3.634	10257			
3	4.18	35157			
4	4.832	5617			
5	4.922	5627			
6	5.496	96490	TCE	-4.31%	93.09
7	5.989	10035			
8	7.572	74281			
9	7.96	7034			
10	8.415	9216			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.496	0.01	5.488	5.504

ORNL Environmental Sciences Divsion

G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 1/30/98

FileName	C:\HPCHEM\1\DATA\032698\002R0501.D		
Operator(s)	MKMCCRACKEN		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	100PPB STD	**Injection Number**	1
Analysis Date	13 Mar 98 10:00 PM	**Instrument Method**	INEELECD.MTH
Report Date	13 Mar 98 10:13 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100 ppb std		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	3.36	11832			
2	3.637	9422			
3	4.182	33279			
4	5.499	94074	TCE	-1.70%	90.76
5	5.994	8080			
6	7.577	68420			
7	8.418	9282			
8	8.853	7420			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.499	0.01	5.491	5.507

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 1/30/98

FileName	C:\HPCHEM\1\DATA\033098\002R0101.D		
Operator(s)	MKMCCRACKEN		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	100PPB STD	**Injection Number**	1
Analysis Date	30 Mar 98 04:45 PM	**Instrument Method**	INEELECD.MTH
Report Date	30 Mar 98 04:58 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100 ppb std		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
5	5.507	94780	TCE	-2.46%	91.44

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.507	0.01	5.499	5.515

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 1/30/98

FileName	C:\HPCHEM\1\DATA\033098\002R0301.D		
Operator(s)	MKMCCRACKEN		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	100PPB STD	**Injection Number**	1
Analysis Date	30 Mar 98 06:54 PM	**Instrument Method**	INEELECD.MTH
Report Date	30 Mar 98 07:07 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100 ppb std		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
3	5.504	93937	TCE	-1.55%	90.63

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.504	0.01	5.496	5.512

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 1/30/98

FileName	C:\HPCHEM\1\DATA\040798\002R0101.D		
Operator(s)	MKMCCRACKEN		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	50PPB STD	**Injection Number**	1
Analysis Date	07 Apr 98 03:38 PM	**Instrument Method**	INEELECD.MTH
Report Date	07 Apr 98 03:50 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	50PPB STD		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
3	5.494	54103			
3	5.494	54103	TCE	-6.54%	52.20

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.494	0.01	5.486	5.504

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 1/30/98

FileName	C:\HPCHEM\1\DATA\040798\002R0201.D		
Operator(s)	MKMCCRACKEN		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	50PPB STD	**Injection Number**	1
Analysis Date	08 Apr 98 09:01 AM	**Instrument Method**	INEELECD.MTH
Report Date	08 Apr 98 09:13 AM	**Data Analysis Method**	INEELECD.MTH
Sample Name	50PPB STD		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
5	5.5	54103	TCE	-6.54%	52.20

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.5	0.01	5.492	5.508

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 1/30/98

FileName	C:\HPCHEM\1\DATA\040998\011R0101.D		
Operator(s)	MKMCCRACKEN		
Instrument	ANALYZER1	**Vial No.**	11
ORNL No.	50PPB CK STD	**Injection Number**	1
Analysis Date	09 Apr 98 03:41 PM	**Instrument Method**	INEELECD.MTH
Report Date	09 Apr 98 03:54 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	50 PPB CK STD		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	3.36	6453			
2	4.179	32514			
3	4.838	5298			
4	5.503	56436	TCE	-11.13%	54.45
5	5.995	9617			
6	7.58	81242			
7	7.968	5326			
8	8.428	11125			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.503	0.01	5.495	5.511

ORNL Environmental Sciences Divsion

G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 1/30/98

FileName	C:\HPCHEM\1\DATA\041398\002R0101.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	cal ck	**Injection Number**	1
Analysis Date	13 Apr 98 03:38 PM	**Instrument Method**	INEELECD.MTH
Report Date	13 Apr 98 03:51 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100 ppb		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	3.351	13490			
2	4.175	32606			
3	5.494	112650	TCE	-21.78%	108.68
4	5.986	11304		NOTE: This 100ppb calck was diluted from the 500ppb std!!!	
5	7.569	18909		Difference likely attributed to human error	
6	8.412	9228			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.494	0.01	5.486	5.502

ORNL Environmental Sciences Divsion

G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 1/30/98

FileName	C:\HPCHEM\1\DATA\041398\002R0901.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	cal ck	**Injection Number**	1
Analysis Date	14 Apr 98 01:19 AM	**Instrument Method**	INEELECD.MTH
Report Date	14 Apr 98 01:32 AM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100 ppb		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	3.364	12172			
2	4.152	40109			
3	5.503	111892	TCE	-20.96%	107.95
4	5.996	13059		NOTE: This 100ppb calck was diluted from the 500ppb std!!!	
5	7.579	24472		Difference likely attributed to human error	
6	8.419	9383			
7	8.83	16774			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.503	0.01	5.495	5.511

ORNL Environmental Sciences Divsion

G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 1/30/98

FileName	C:\HPCHEM\1\DATA\041498\002R0101.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	cal ck	**Injection Number**	1
Analysis Date	14 Apr 98 01:33 PM	**Instrument Method**	INEELECD.MTH
Report Date	14 Apr 98 01:46 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100 ppb (diluted from 500ppb std)		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	3.365	12696			
2	4.167	36869			
3	5.507	103033	TCE	-11.38%	99.40
4	6.001	7179		NOTE: This 100ppb calck was diluted from the 500ppb std!!!	
5	7.584	17358		Difference likely attributed to human error	
6	8.425	10372			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.507	0.01	5.499	5.515

ORNL Environmental Sciences Divsion

G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 1/30/98

FileName	C:\HPCHEM\1\DATA\041498\002R0501.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	cal ck	**Injection Number**	1
Analysis Date	14 Apr 98 06:04 PM	**Instrument Method**	INEELECD.MTH
Report Date	14 Apr 98 06:17 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100 ppb (diluted from 500ppb std)		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	3.363	14644			
2	3.64	5459			
3	4.157	41818			
4	5.506	103079	TCE	-11.43%	99.45
5	6.001	9343			
6	7.584	16171		NOTE: This 100ppb calck was diluted from the 500ppb std!!!	
7	8.424	7938		Difference likely attributed to human error	

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.506	0.01	5.498	5.514

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\043098\002R0101.D		
Operator(s)	MKMCCRACKEN		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	std 3	**Injection Number**	1
Analysis Date	30 Apr 98 04:47 PM	**Instrument Method**	INEELECD.MTH
Report Date	30 Apr 98 04:59 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100ppb std		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	3.419	32743			
2	3.911	5777			
3	4.192	34426			
4	4.842	51272	TCE		
5	5.509	126680	TCE	0.06%	114.68
6	6.001	15560			
7	7.589	828776			
8	8.428	9180			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.509	0.01	5.501	5.517

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\043098\002R0501.D		
Operator(s)	MKMCCRACKEN		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	std 3	**Injection Number**	1
Analysis Date	30 Apr 98 09:55 PM	**Instrument Method**	INEELECD.MTH
Report Date	30 Apr 98 10:07 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100ppb std		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	3.418	21967			
2	3.623	11374			
3	4.19	33245			
4	4.842	48116			
5	5.51	127429	TCE	-0.53%	115.36
6	6.003	14418			
7	7.589	832166			
8	8.428	10775			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.51	0.01	5.502	5.518

ORNL Environmental Sciences Divsion

G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\050898\002R0101.D		
Operator(s)	SR Cline		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	Cal Ck	**Injection Number**	1
Analysis Date	08 May 98 03:43 PM	**Instrument Method**	INEELECD.MTH
Report Date	08 May 98 03:56 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100 ppb		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	3.415	22593			
2	3.623	9821			
3	4.182	32527			
4	4.842	47109			
5	5.51	126905	TCE	-0.12%	114.88
6	6.002	12209			
7	7.589	817796			
8	8.435	10666			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.51	0.01	5.502	5.518

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\050898\002R0201.D		
Operator(s)	SR Cline		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	Cal Ck	**Injection Number**	1
Analysis Date	08 May 98 05:01 PM	**Instrument Method**	INEELECD.MTH
Report Date	08 May 98 05:14 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100 ppb		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	3.421	21370			
2	3.625	9917			
3	4.195	32478			
4	4.842	45749			
5	5.509	125790	TCE	0.76%	113.87
6	6.002	11845			
7	7.588	812687			
8	8.432	10629			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.509	0.01	5.501	5.517

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\051598\002R0101.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	cal ck	**Injection Number**	1
Analysis Date	15 May 98 07:18 AM	**Instrument Method**	INEELECD.MTH
Report Date	15 May 98 07:31 AM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100 ppb		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	3.354	122932			
2	3.629	52353			
3	4.038	5373			
4	4.168	39634			
5	4.842	45134			
6	5.507	1028479	TCE	0.06%	931.05
7	6.002	16893	(1000 ppb Cal CK)		
8	7.009	6196			
9	7.587	875412			
10	8.435	10912			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.507	0.01	5.499	5.515

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\051598\002R0201.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	cal ck	**Injection Number**	1
Analysis Date	15 May 98 11:55 AM	**Instrument Method**	INEELECD.MTH
Report Date	15 May 98 12:07 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100 ppb		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	3.353	121499			
2	3.631	49826			
3	4.04	5123			
4	4.167	38466			
5	4.843	44055			
6	5.509	1023653	TCE	0.53%	926.68
7	6.004	13021	(1000 ppb Cal CK)		
8	7.589	870486			
9	8.434	10278			
10	8.435	10912			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.509	0.01	5.501	5.517

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\052698\004R0301.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	4
ORNL No.	CAL CHECK	**Injection Number**	1
Analysis Date	26 May 98 12:05 PM	**Instrument Method**	INEELECD.MTH
Report Date	26 May 98 12:18 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100PPB STD		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	3.418	22565			
2	3.63	8972			
3	4.186	37261			
4	4.847	45352			
5	5.515	126998	TCE	-0.19%	114.97
6	6.006	14764			
7	7.005	7186			
8	7.593	838891			
9	8.432	9436			
10	8.989	33860			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.515	0.01	5.507	5.523

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\052898\002R0101.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	Cal. Check	**Injection Number**	1
Analysis Date	28 May 98 02:25 PM	**Instrument Method**	INEELECD.MTH
Report Date	28 May 98 02:38 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100 ppb std		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	3.416	24955			
2	3.626	8914			
3	3.927	8051			
4	4.182	39422			
5	4.845	46531			
6	5.512	127246	TCE	-0.39%	115.19
7	6.002	15944			
8	7.59	831061			
9	8.429	10491			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.512	0.01	5.504	5.520

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\052898\002R1501.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	Cal. Check	**Injection Number**	1
Analysis Date	29 May 98 06:03 AM	**Instrument Method**	INEELECD.MTH
Report Date	29 May 98 06:16 AM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100 ppb std		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	3.42	21991			
2	3.631	7768			
3	3.831	8808			
4	4.2	39314			
5	4.848	44774			
6	5.514	125828	TCE	0.73%	113.91
7	6.005	15166			
8	7.592	814630			
9	8.431	9597			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.514	0.01	5.506	5.522

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\052998A\002R0101.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	Cal. Check	**Injection Number**	1
Analysis Date	29 May 98 03:41 PM	**Instrument Method**	INEELECD.MTH
Report Date	29 May 98 03:53 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100 ppb std		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	3.419	24702			
2	3.631	8929			
3	4.191	42026			
4	4.849	47943			
5	5.516	128711	TCE	-1.55%	116.52
6	6.005	15575			
7	7.593	851301			
8	8.433	9713			
9	8.431	9597			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.516	0.01	5.508	5.524

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\052998A\002R1501.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	Cal. Check	**Injection Number**	1
Analysis Date	30 May 98 08:22 AM	**Instrument Method**	INEELECD.MTH
Report Date	30 May 98 08:35 AM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100 ppb std		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	3.418	20710			
2	3.637	7536			
3	3.837	9693			
4	4.191	37483			
5	4.85	46168			
6	5.518	124761	TCE	1.57%	112.94
7	6.009	14288			
8	7.597	861124			
9	8.435	10203			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.518	0.01	5.510	5.526

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\060498\002R0101.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	Cal. Check	**Injection Number**	1
Analysis Date	04 Jun 98 04:49 PM	**Instrument Method**	INEELECD.MTH
Report Date	04 Jun 98 05:01 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100 ppb std		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	3.426	22010			
2	3.629	6181			
3	3.846	5033			
4	4.231	32235			
5	4.85	38908			
6	5.518	125723	TCE	0.81%	113.81
7	6.01	18398			
8	6.822	5097			
9	7.599	836674			
10	8.434	12375			
11	7.595	842346			
12	8.431	10982			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.518	0.01	5.510	5.526

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\060498\002R1501.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	Cal. Check	**Injection Number**	1
Analysis Date	05 Jun 98 08:50 AM	**Instrument Method**	INEELECD.MTH
Report Date	05 Jun 98 09:03 AM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100 ppb std		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	1.233	5922			
2	3.418	21028			
3	3.634	7215			
4	3.839	8405			
5	4.215	39864			
6	4.852	45926			
7	5.52	125325	TCE	1.13%	113.45
8	6.012	16721			
9	7.6	861821			
10	8.437	10426			
11	7.595	842346			
12	8.431	10982			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.52	0.01	5.512	5.528

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\061598\002R0101.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	Cal. Check	**Injection Number**	1
Analysis Date	15 Jun 98 08:27 AM	**Instrument Method**	INEELECD.MTH
Report Date	15 Jun 98 08:40 AM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100 ppb std		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	1.184	5982			
2	3.419	27089			
3	3.631	8190			
4	3.828	8040			
5	4.199	47955			
6	4.851	47868			
7	5.519	129209	TCE	-1.94%	116.97
8	6.01	15852			
9	7.599	867687			
10	8.437	9679			
11	8.435	10433			
12	8.961	5250			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.519	0.01	5.511	5.527

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\061598\002R1601.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	Cal. Check	**Injection Number**	1
Analysis Date	16 Jun 98 01:08 AM	**Instrument Method**	INEELECD.MTH
Report Date	16 Jun 98 01:20 AM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100 ppb std		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	1.25	17870			
2	2.763	10138			
3	3.421	22533			
4	3.634	7469			
5	3.832	9910			
6	4.227	55009			
7	4.851	46740			
8	5.226	5929			
9	5.519	125256	TCE	1.18%	113.39
10	6.01	16679			
11	7.6	887263			
12	8.438	10073			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.519	0.01	5.511	5.527

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA		
Operator(s)	SR CLINE	**Page No.**	1
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	Cal. Check	**Injection Number**	1
Analysis Date	6/16/98 5:39	**Instrument Method**	INEELECD.MTH
Report Date	6/16/98 5:52	**Data Analysis Method**	INEELECD.MTH
Sample Name	100 ppb std		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	1.175	8791			
2	3.42	26645			
3	3.631	8246			
4	3.828	8601			
5	4.193	50851			
6	4.85	47598			
7	5.517	128950	TCE	-1.73%	116.73
8	6.008	15024			
9	7.596	862329			
10	8.434	10499			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.517	0.01	5.509	5.525

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\061898\002R0101.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	Cal. Check	**Injection Number**	1
Analysis Date	18 Jun 98 04:14 PM	**Instrument Method**	INEELECD.MTH
Report Date	18 Jun 98 04:27 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100 ppb std		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	0.878	8308			
2	3.161	5294			
3	3.426	22486			
4	3.638	7864			
5	3.829	6267			
6	4.176	52577			
7	4.851	46022			
8	5.518	126278	TCE	0.37%	114.32
9	6.008	12132			
10	7.598	872185			
11	8.435	9563			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.518	0.01	5.510	5.526

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\061898\002R1501.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	Cal. Check	**Injection Number**	1
Analysis Date	19 Jun 98 07:57 AM	**Instrument Method**	INEELECD.MTH
Report Date	19 Jun 98 08:09 AM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100 ppb std		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	1.228	19850			
2	2.753	10761			
3	3.421	23092			
4	3.637	8057			
5	3.834	10319			
6	4.216	55545			
7	4.854	46376			
8	5.235	5774			
9	5.521	125042	TCE	1.35%	113.20
10	6.011	15291			
11	7.601	887886			
12	8.439	10071			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.521	0.01	5.513	5.529

ORNL Environmental Sciences Divsion

G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\061998a\002R0101.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	Cal. Check	**Injection Number**	1
Analysis Date	19 Jun 98 11:01 AM	**Instrument Method**	INEELECD.MTH
Report Date	19 Jun 98 11:14 AM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100 ppb std		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	1.343	9788			
2	2.824	5841			
3	3.43	26047			
4	3.633	9253			
5	3.832	10495			
6	4.263	51065			
7	4.853	46421			
8	5.519	128430	TCE	-1.32%	116.26
9	6.011	12021			
10	7.598	861651			
11	8.437	9712			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.519	0.01	5.511	5.527

ORNL Environmental Sciences Divsion

G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\061998a\002R0801.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	Cal. Check	**Injection Number**	1
Analysis Date	19 Jun 98 02:52 PM	**Instrument Method**	INEELECD.MTH
Report Date	19 Jun 98 03:05 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100 ppb std		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	1.237	17849			
2	2.755	9589			
3	3.422	24372			
4	3.636	8175			
5	3.833	10788			
6	4.218	55333			
7	4.851	46640			
8	5.237	5740			
9	5.519	126352	TCE	0.32%	114.38
10	6.009	14764			
11	7.599	850619			
12	8.437	10174			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.519	0.01	5.511	5.527

ORNL Environmental Sciences Divsion

G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\061998B\002R0101.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	Cal. Check	**Injection Number**	1
Analysis Date	19 Jun 98 04:06 PM	**Instrument Method**	INEELECD.MTH
Report Date	19 Jun 98 04:19 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100 ppb std		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	3.423	20083			
2	3.633	5925			
3	3.832	5726			
4	4.211	34594			
5	4.85	40458			
6	5.517	125722	TCE	0.81%	113.81
7	6.008	13907			
8	7.596	853808			
9	8.434	10205			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.517	0.01	5.509	5.525

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\061998B\002R1501.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	Cal. Check	**Injection Number**	1
Analysis Date	20 Jun 98 07:43 AM	**Instrument Method**	INEELECD.MTH
Report Date	20 Jun 98 07:55 AM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100 ppb std		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	1.334	8096			
2	3.424	23378			
3	3.637	8724			
4	3.839	11550			
5	4.255	45384			
6	4.855	46863			
7	5.251	6036			
8	5.523	126857	TCE	-0.08%	114.84
9	6.013	14776			
10	7.603	827737			
11	8.441	10672			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.523	0.01	5.515	5.531

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G.C. Report

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\061998B\001R0101.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	1
ORNL No.	Blank	**Injection Number**	1
Analysis Date	19 Jun 98 03:55 PM	Instrument Method	INEELECD.MTH
Report Date	19 Jun 98 04:06 PM	Data Analysis Method	INEELECD.MTH
Sample Name	blank		
Dilution Factor	1		

Signal		2			**G.C.**		**Sample**
Pk#		**RetTime**	**Area**	**VOC**	**Conc. (ug/L)**	**FLAG**	**Conc. (ug/L)**
	1	3.417	9424	No I.D.			
	2	4.197	113936	No I.D.			
	3	4.578	8651	No I.D.			
	4	5.515	6679	TCE	6.046		6
	5	6.005	10113	No I.D.			
	6	7.591	9955	No I.D.			
	7	7.988	7852	No I.D.			
	8	8.436	5249	No I.D.			

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G.C. Report

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\061998B\001R0301.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	1
ORNL No.	Blank	**Injection Number**	1
Analysis Date	19 Jun 98 05:49 PM	Instrument Method	INEELECD.MTH
Report Date	19 Jun 98 06:02 PM	Data Analysis Method	INEELECD.MTH
Sample Name	blank		
Dilution Factor	1		

Signal		2			**G.C.**		**Sample**
Pk#	**RetTime**		**Area**	**VOC**	**Conc. (ug/L)**	**FLAG**	**Conc. (ug/L)**
1	3.418		9579	No I.D.			
2	3.634		5393	No I.D.			
3	3.839		6514	No I.D.			
4	4.197		109218	No I.D.			
5	4.58		8715	No I.D.			
6	5.521		13798	TCE	12.491		12
7	6.014		10561	No I.D.			
8	6.69		6334	No I.D.			
9	7.597		8375	No I.D.			
10	7.996		6020	No I.D.			

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G.C. Report

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\061998B\001R0501.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	1
ORNL No.	Blank	**Injection Number**	1
Analysis Date	19 Jun 98 08:24 PM	Instrument Method	INEELECD.MTH
Report Date	19 Jun 98 08:36 PM	Data Analysis Method	INEELECD.MTH
Sample Name	blank		
Dilution Factor	1		

Signal		2			**G.C.**		**Sample**
Pk#	**RetTime**		**Area**	**VOC**	**Conc. (ug/L)**	**FLAG**	**Conc. (ug/L)**
1	3.417		9401	No I.D.			
2	3.631		5654	No I.D.			
3	3.841		7095	No I.D.			
4	4.188		111153	No I.D.			
5	4.582		9374	No I.D.			
6	5.52		6810	TCE	6.165		6
7	6.013		9613	No I.D.			
8	6.697		7707	No I.D.			
9	7.596		9950	No I.D.			
10	7.995		6983	No I.D.			
11	8.438		5163	No I.D.			

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G.C. Report

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\061998B\001R0701.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	1
ORNL No.	Blank	**Injection Number**	1
Analysis Date	19 Jun 98 10:45 PM	Instrument Method	INEELECD.MTH
Report Date	19 Jun 98 10:57 PM	Data Analysis Method	INEELECD.MTH
Sample Name	blank		
Dilution Factor	1		

Signal		2			**G.C.**		**Sample**
Pk#	**RetTime**		**Area**	**VOC**	**Conc. (ug/L)**	**FLAG**	**Conc. (ug/L)**
1	3.426		9067	No I.D.			
2	3.633		5835	No I.D.			
3	3.843		7920	No I.D.			
4	4.209		110229	No I.D.			
5	4.585		9450	No I.D.			
6	5.522		6795	TCE	6.151		6
7	6.015		7672	No I.D.			
8	8		5354	No I.D.			
9	8.954		8234	No I.D.			

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G.C. Report

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\061998B\001R0901.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	1
ORNL No.	Blank	**Injection Number**	1
Analysis Date	20 Jun 98 01:06 AM	Instrument Method	INEELECD.MTH
Report Date	20 Jun 98 01:18 AM	Data Analysis Method	INEELECD.MTH
Sample Name	blank		
Dilution Factor	1		

Signal		2			**G.C.**		**Sample**
Pk#	**RetTime**		**Area**	**VOC**	**Conc. (ug/L)**	**FLAG**	**Conc. (ug/L)**
1	1.314		5259	No I.D.			
2	3.427		9306	No I.D.			
3	3.635		5976	No I.D.			
4	3.843		7867	No I.D.			
5	4.215		111206	No I.D.			
6	4.583		9365	No I.D.			
7	5.246		7023	No I.D.			
8	5.523		8088	TCE	7.322		7
9	6.015		11622	No I.D.			
10	6.607		7254	No I.D.			
11	7.598		9001	No I.D.			
12	7.999		6287	No I.D.			
13	8.443		5039	No I.D.			

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G.C. Report

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\061998B\001R1101.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	1
ORNL No.	Blank	**Injection Number**	1
Analysis Date	20 Jun 98 03:27 AM	Instrument Method	INEELECD.MTH
Report Date	20 Jun 98 03:39 AM	Data Analysis Method	INEELECD.MTH
Sample Name	blank		
Dilution Factor	1		

Signal		2			**G.C.**		**Sample**
Pk#	**RetTime**		**Area**	**VOC**	**Conc. (ug/L)**	**FLAG**	**Conc. (ug/L)**
1	3.416		9012	No I.D.			
2	3.635		5771	No I.D.			
3	3.846		7934	No I.D.			
4	4.193		109884	No I.D.			
5	4.585		9321	No I.D.			
6	5.322		6802	No I.D.			
7	5.525		8057	TCE	7.294		7
8	6.017		11426	No I.D.			
9	6.612		7221	No I.D.			
10	7.601		9571	No I.D.			
11	8.003		6397	No I.D.			
12	8.445		5067	No I.D.			
13	8.969		5081	No I.D.			

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G.C. Report

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\061998B\001R1301.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	1
ORNL No.	Blank	**Injection Number**	1
Analysis Date	20 Jun 98 06:00 AM	Instrument Method	INEELECD.MTH
Report Date	20 Jun 98 06:13 AM	Data Analysis Method	INEELECD.MTH
Sample Name	blank		
Dilution Factor	1		

Signal		2			**G.C.**		**Sample**
Pk#	**RetTime**		**Area**	**VOC**	**Conc. (ug/L)**	**FLAG**	**Conc. (ug/L)**
1	3.416		8504	No I.D.			
2	3.634		5528	No I.D.			
3	3.841		7729	No I.D.			
4	4.191		109789	No I.D.			
5	4.584		9126	No I.D.			
6	5.524		8187	TCE	7.411		7
7	6.015		10003	No I.D.			
8	6.611		7895	No I.D.			
9	7.6		10427	No I.D.			
10	8.002		6978	No I.D.			
11	8.444		5355	No I.D.			

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G.C. Report

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\061998B\001R1501.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	1
ORNL No.	Blank	**Injection Number**	1
Analysis Date	20 Jun 98 07:30 AM	Instrument Method	INEELECD.MTH
Report Date	20 Jun 98 07:42 AM	Data Analysis Method	INEELECD.MTH
Sample Name	blank		
Dilution Factor	1		

Signal		2			**G.C.**		**Sample**
Pk#	**RetTime**		**Area**	**VOC**	**Conc. (ug/L)**	**FLAG**	**Conc. (ug/L)**
1	3.419		9535	No I.D.			
2	3.631		5976	No I.D.			
3	3.842		8201	No I.D.			
4	4.191		109810	No I.D.			
5	4.585		9122	No I.D.			
6	5.25		7090	No I.D.			
7	5.524		8136	TCE	7.365		7
8	6.017		10058	No I.D.			
9	6.693		8114	No I.D.			
10	8.445		5201	No I.D.			

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\062398\002R0101.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	Cal. Check	**Injection Number**	1
Analysis Date	23 Jun 98 09:51 AM	**Instrument Method**	INEELECD.MTH
Report Date	23 Jun 98 10:04 AM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100 ppb std		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	1.354	13372			
2	2.842	7325			
3	3.427	28903			
4	3.63	9635			
5	3.849	14672			
6	4.267	56037			
7	4.855	46375			
8	5.52	129933	TCE	-2.51%	118
9	6.008	17593			
10	7.599	872533			
11	8.435	10119			
12	8.697	6149			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.52	0.01	5.512	5.528

ORNL Environmental Sciences Divsion

G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\062798\002R0101.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	Cal. Check	**Injection Number**	1
Analysis Date	27 Jun 98 08:29 AM	**Instrument Method**	INEELECD.MTH
Report Date	27 Jun 98 08:41 AM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100 ppb std		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	3.421	33918			
2	3.632	10317			
3	3.936	13870			
4	4.205	49726			
5	4.856	48769			
6	5.521	131537	TCE	-3.78%	119
7	6.009	17146			
8	7.6	866964			
9	8.439	10689			
10	8.7	6194			
11	8.435	10119			
12	8.697	6149			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.521	0.01	5.513	5.529

ORNL Environmental Sciences Divsion

G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\062798\002R1501.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	Cal. Check	**Injection Number**	1
Analysis Date	27 Jun 98 11:45 PM	**Instrument Method**	INEELECD.MTH
Report Date	27 Jun 98 11:58 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100 ppb std		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	1.072	22274			
2	2.634	11297			
3	3.424	24512			
4	3.634	8501			
5	3.847	13033			
6	4.16	66350			
7	4.851	46134			
8	5.517	127289	TCE	-0.42%	115
9	6.007	17293			
10	7.597	874373			
11	8.431	11760			
12	8.698	6099			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.517	0.01	5.509	5.525

ORNL Environmental Sciences Divsion

G.C. Report

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\062798\001R0101.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	1
ORNL No.	Blank	**Injection Number**	1
Analysis Date	27 Jun 98 08:18 AM	Instrument Method	INEELECD.MTH
Report Date	27 Jun 98 08:28 AM	Data Analysis Method	INEELECD.MTH
Sample Name	blank		
Dilution Factor	1		

Signal		2			**G.C.**		**Sample**
Pk#	**RetTime**		**Area**	**VOC**	**Conc. (ug/L)**	**FLAG**	**Conc. (ug/L)**
1	3.969		14874	No I.D.			
2	4.188		52749	No I.D.			
3	6.009		17413	No I.D.			
4	7.603		20460	No I.D.			
5	8.445		8615	No I.D.			
6	8.704		5020	No I.D.			

TCE Not Detected

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G.C. Report

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\062798\001R0301.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	1
ORNL No.	Blank	**Injection Number**	1
Analysis Date	27 Jun 98 09:59 AM	Instrument Method	INEELECD.MTH
Report Date	27 Jun 98 10:11 AM	Data Analysis Method	INEELECD.MTH
Sample Name	blank		
Dilution Factor	1		

Signal		2			**G.C.**		**Sample**
Pk#	**RetTime**		**Area**	**VOC**	**Conc. (ug/L)**	**FLAG**	**Conc. (ug/L)**
1	3.364		8751	No I.D.			
2	3.957		19740	No I.D.			
3	4.195		44478	No I.D.			
4	4.583		27933	No I.D.			
5	4.858		5566	No I.D.			
6	5.118		14299	No I.D.			
7	6.009		14635	No I.D.			
8	7.602		19581	No I.D.			
9	7.99		6962	No I.D.			
10	8.442		8338	No I.D.			
11	8.938		19935	No I.D.			

TCE Not Detected

ORNL Environmental Sciences Divsion

G.C. Report

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\062798\001R0501.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	1
ORNL No.	Blank	**Injection Number**	1
Analysis Date	27 Jun 98 12:20 PM	Instrument Method	INEELECD.MTH
Report Date	27 Jun 98 12:33 PM	Data Analysis Method	INEELECD.MTH
Sample Name	blank		
Dilution Factor	1		

Signal		2			**G.C.**		**Sample**
Pk#	**RetTime**		**Area**	**VOC**	**Conc. (ug/L)**	**FLAG**	**Conc. (ug/L)**
1	3.933		12120	No I.D.			
2	4.192		53414	No I.D.			
3	6.01		15056	No I.D.			
4	7.601		20742	No I.D.			
5	8.44		9398	No I.D.			
6	8.702		5458	No I.D.			

TCE Not Detected

ORNL Environmental Sciences Divsion

G.C. Report

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\062798\001R0701.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	1
ORNL No.	Blank	**Injection Number**	1
Analysis Date	27 Jun 98 02:42 PM	Instrument Method	INEELECD.MTH
Report Date	27 Jun 98 02:55 PM	Data Analysis Method	INEELECD.MTH
Sample Name	blank		
Dilution Factor	1		

Signal		2			**G.C.**		**Sample**
Pk#	**RetTime**		**Area**	**VOC**	**Conc. (ug/L)**	**FLAG**	**Conc. (ug/L)**
1	3.858		13855	No I.D.			
2	4.184		46352	No I.D.			
3	6.008		14710	No I.D.			
4	7.599		21257	No I.D.			
5	8.437		8858	No I.D.			

TCE Not Detected

ORNL Environmental Sciences Divsion

G.C. Report

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\062798\001R0901.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	1
ORNL No.	Blank	**Injection Number**	1
Analysis Date	27 Jun 98 05:04 PM	Instrument Method	INEELECD.MTH
Report Date	27 Jun 98 05:17 PM	Data Analysis Method	INEELECD.MTH
Sample Name	blank		
Dilution Factor	1		

Signal		2			**G.C.**		**Sample**
Pk#		**RetTime**	**Area**	**VOC**	**Conc. (ug/L)**	**FLAG**	**Conc. (ug/L)**
	1	3.273	5255	No I.D.			
	2	3.861	13901	No I.D.			
	3	4.166	53962	No I.D.			
	4	5.318	5647	No I.D.			
	5	5.521	5432	TCE	4.917	U	5
	6	6.006	15144	No I.D.			
	7	6.611	5445	No I.D.			
	8	7.597	21464	No I.D.			
	9	8.433	9733	No I.D.			

ORNL Environmental Sciences Divsion

G.C. Report

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\062798\001R1101.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	1
ORNL No.	Blank	**Injection Number**	1
Analysis Date	27 Jun 98 07:27 PM	Instrument Method	INEELECD.MTH
Report Date	27 Jun 98 07:39 PM	Data Analysis Method	INEELECD.MTH
Sample Name	blank		
Dilution Factor	1		

Signal		2			**G.C.**		**Sample**
Pk#	**RetTime**		**Area**	**VOC**	**Conc. (ug/L)**	**FLAG**	**Conc. (ug/L)**
1	3.857		13588	No I.D.			
2	4.168		50474	No I.D.			
3	6.005		13229	No I.D.			
4	7.594		21584	No I.D.			
5	8.428		7087	No I.D.			

TCE Not Detected

ORNL Environmental Sciences Divsion

G.C. Report

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\062798\001R1301.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	1
ORNL No.	Blank	**Injection Number**	1
Analysis Date	27 Jun 98 09:36 PM	Instrument Method	INEELECD.MTH
Report Date	27 Jun 98 09:49 PM	Data Analysis Method	INEELECD.MTH
Sample Name	blank		
Dilution Factor	1		

Signal		2			**G.C.**		**Sample**
Pk#	**RetTime**		**Area**	**VOC**	**Conc. (ug/L)**	**FLAG**	**Conc. (ug/L)**
1	3.896		15814	No I.D.			
2	4.187		48092	No I.D.			
3	6.006		16368	No I.D.			
4	7.596		20944	No I.D.			
5	8.43		8734	No I.D.			

TCE Not Detected

ORNL Environmental Sciences Divsion

G.C. Report

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\062798\001R1501.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	1
ORNL No.	Blank	**Injection Number**	1
Analysis Date	27 Jun 98 11:32 PM	Instrument Method	INEELECD.MTH
Report Date	27 Jun 98 11:45 PM	Data Analysis Method	INEELECD.MTH
Sample Name	blank		
Dilution Factor	1		

Signal		2			**G.C.**		**Sample**
Pk#	**RetTime**		**Area**	**VOC**	**Conc. (ug/L)**	**FLAG**	**Conc. (ug/L)**
1	3.278		9526	No I.D.			
2	3.856		17823	No I.D.			
3	4.184		45782	No I.D.			
4	5.318		5230	No I.D.			
5	6.007		15303	No I.D.			
6	7.599		23009	No I.D.			
7	8.434		10876	No I.D.			

TCE Not Detected

ORNL Environmental Sciences Divsion

G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\050898\014R0201.D		
Operator(s)	xiangping		
Instrument	ANALYZER1	**Vial No.**	14
ORNL No.	CAL CK	**Injection Number**	1
Analysis Date	29 Jun 98 04:09 PM	**Instrument Method**	INEELECD.MTH
Report Date	29 Jun 98 04:22 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100 PPB CAL CHK		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	0.852	9700			
2	3.43	23786			
3	3.635	8826			
4	3.848	7225			
5	4.059	15243			
6	4.175	46304			
7	4.85	46525			
8	5.517	127019	TCE	-0.21%	115
9	6.003	12515			
10	7.596	867994			
11	7.985	5212			
12	8.44	10100			
13	8.7	5516			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.517	0.01	5.509	5.525

ORNL Environmental Sciences Divsion

G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\070898\002R0101.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	Cal. Check	**Injection Number**	1
Analysis Date	08 Jul 98 01:08 PM	**Instrument Method**	INEELECD.MTH
Report Date	08 Jul 98 01:21 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100 ppb std		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	3.423	26383			
2	3.635	10252			
3	3.839	6861			
4	4.066	9432			
5	4.174	50727			
6	4.851	50965			
7	5.517	133570	TCE	-5.38%	121
8	6.007	8791			
9	6.924	5209			
10	7.595	896432			
11	7.982	5588			
12	8.451	9607			
13	8.699	6262			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.517	0.01	5.509	5.525

ORNL Environmental Sciences Divsion

G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\070898\002R0301.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	Cal. Check	**Injection Number**	1
Analysis Date	08 Jul 98 02:00 PM	**Instrument Method**	INEELECD.MTH
Report Date	08 Jul 98 02:13 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100 ppb std		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	1.01	13010			
2	2.592	5247			
3	3.422	28948			
4	3.634	9941			
5	3.838	9949			
6	4.146	65778			
7	4.85	51785			
8	5.516	133813	TCE	-5.57%	121
9	6.004	11432			
10	6.923	5577			
11	7.594	889957			
12	7.981	5746			
13	8.446	9643			
14	8.698	6313			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.516	0.01	5.508	5.524

ORNL Environmental Sciences Divsion

G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\071098\002R0101.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	Cal. Check	**Injection Number**	1
Analysis Date	10 Jul 98 03:45 PM	**Instrument Method**	INEELECD.MTH
Report Date	10 Jul 98 03:57 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100 ppb calck		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	3.217	6723			
2	3.424	21606			
3	4.199	35632			
4	4.847	47260			
5	5.512	166479	TCE	-31.34%	151
6	6.004	9680		NOTE: Likely Not Bad	
7	7.591	909023		Used another vial of STD	
8	7.976	5493			
9	8.443	9848			
10	8.691	6371			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.512	0.01	5.504	5.520

ORNL Environmental Sciences Divsion

G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\071098\002R1501.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	Cal. Check	**Injection Number**	1
Analysis Date	11 Jul 98 07:27 AM	**Instrument Method**	INEELECD.MTH
Report Date	11 Jul 98 07:40 AM	**Data Analysis Method**	INEELECD.MTH
Sample Name	100 ppb calck		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	1.047	5108			
2	3.28	1137276			
3	4.031	25577			
4	4.132	105817			
5	5.446	8768505	NOT TCl	-6817.84%	7938
6	7.295	8042		NOTE: Likely Not Bad	
7	7.685	13023		Used another vial of STD	
8	7.976	5493			
9	8.443	9848			
10	8.691	6371			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.446	0.01	5.438	5.454

ORNL Environmental Sciences Divsion

G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\071198\003R0201.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	3
ORNL No.	Cal. Check	**Injection Number**	1
Analysis Date	11 Jul 98 09:03 AM	**Instrument Method**	INEELECD.MTH
Report Date	11 Jul 98 09:16 AM	**Data Analysis Method**	INEELECD.MTH
Sample Name	500 ppb std		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	1.089	19755			
2	2.661	8020			
3	3.372	73089			
4	3.64	22004			
5	3.828	15069			
6	4.166	68588			
7	4.853	48407			
8	5.518	563853		-4.45%	510
9	6.01	11458			
10	6.927	6396			
11	7.598	1021628			
12	7.99	5358			
13	8.449	10711			
14	8.703	7162			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.518	0.01	5.510	5.526

ORNL Environmental Sciences Divsion

G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\071198\003R1501.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	3
ORNL No.	Cal. Check	**Injection Number**	1
Analysis Date	12 Jul 98 01:40 AM	**Instrument Method**	INEELECD.MTH
Report Date	12 Jul 98 01:52 AM	**Data Analysis Method**	INEELECD.MTH
Sample Name	500 ppb std		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	1.074	43834			
2	2.651	21159			
3	3.378	70731			
4	3.643	20824			
5	3.839	18937			
6	4.16	83995			
7	4.852	48191			
8	5.258	6272			
9	5.518	550281		-1.94%	498
10	6.011	11919			
11	6.927	6853			
12	7.6	1049209			
13	8.442	12720			
14	8.701	7511			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.518	0.01	5.510	5.526

ORNL Environmental Sciences Divsion

G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\071398\002R0101.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	Cal. Check	**Injection Number**	1
Analysis Date	13 Jul 98 11:31 AM	**Instrument Method**	INEELECD.MTH
Report Date	13 Jul 98 11:44 AM	**Data Analysis Method**	INEELECD.MTH
Sample Name	500 ppb calck		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	1.057	11123			
2	3.379	74413			
3	3.643	22106			
4	3.832	16257			
5	4.158	63535			
6	4.855	48156			
7	5.52	562110	TCE	-4.13%	509
8	6.01	13212			
9	6.928	6503			
10	7.6	1039223			
11	7.991	5116			
12	8.444	11879			
13	8.701	7586			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.52	0.01	5.512	5.528

ORNL Environmental Sciences Divsion

G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\071398\002R1201.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	Cal. Check	**Injection Number**	1
Analysis Date	13 Jul 98 07:17 PM	**Instrument Method**	INEELECD.MTH
Report Date	13 Jul 98 07:29 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	500 ppb calck		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	0.991	26978			
2	2.575	11767			
3	3.39	71834			
4	3.641	21529			
5	3.834	18888			
6	4.133	73771			
7	4.851	48199			
8	5.248	5845			
9	5.516	554820	TCE	-2.78%	502
10	6.003	16152			
11	6.925	7449			
12	7.597	1047205			
13	7.989	5857			
14	8.439	13172			
15	8.699	7358			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.516	0.01	5.508	5.524

ORNL Environmental Sciences Divsion

G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\071698\002R0101.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	Cal. Check	**Injection Number**	1
Analysis Date	16 Jul 98 03:28 PM	**Instrument Method**	INEELECD.MTH
Report Date	16 Jul 98 03:41 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	50 ppb std		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	3.123	92505			
2	3.285	1057386			
3	4.035	31415			
4	4.145	119114			
5	5.454	8974816		NO PEAK ID FOR TCE	
6	7.586	21655		Believed that Wrong STD was used by mistake	

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE		0.01	-0.008	0.008

ORNL Environmental Sciences Divsion

G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\071698\002R1501.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	Cal. Check	**Injection Number**	1
Analysis Date	17 Jul 98 07:38 AM	**Instrument Method**	INEELECD.MTH
Report Date	17 Jul 98 07:50 AM	**Data Analysis Method**	INEELECD.MTH
Sample Name	50 ppb std		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	1.167	13010			
2	2.739	8092			
3	3.435	22948			
4	3.642	5815			
5	3.851	18570			
6	4.194	54578			
7	4.857	50441			
8	5.262	5640			
9	5.525	70098	TCE	-14.15%	63
10	6.012	15089			
11	6.931	6564			
12	7.603	959551			
13	8.446	12184			
14	8.706	6359			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.525	0.01	5.517	5.533

ORNL Environmental Sciences Divsion

G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\071798\002R0101.D		
Operator(s)	SR Cline		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	Cal. Check	**Injection Number**	1
Analysis Date	17 Jul 98 08:32 AM	**Instrument Method**	INEELECD.MTH
Report Date	17 Jul 98 08:45 AM	**Data Analysis Method**	INEELECD.MTH
Sample Name	500 ppb std		
Dilution Factor	1		
Signal	0		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
0	0	0			
1	1.185	23010			
2	2.722	13570			
3	3.375	73474			
4	3.646	22424			
5	3.843	18552			
6	4.197	73049			
7	4.86	48612			
8	5.268	5154			
9	5.525	565930	TCE	-4.84%	512
10	6.017	14258			
11	6.934	6357			
12	7.606	1031717			
13	7.996	19322			
14	8.342	5683			
15	8.449	13897			
16	8.709	6980			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.525	0.01	5.517	5.533

ORNL Environmental Sciences Divsion

G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\071798\002R1101.D		
Operator(s)	SR Cline		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	Cal. Check	**Injection Number**	1
Analysis Date	17 Jul 98 08:24 PM	**Instrument Method**	INEELECD.MTH
Report Date	17 Jul 98 08:37 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	500 ppb std		
Dilution Factor	1		
Signal	0		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
0	0	0			
1	0.91	40615			
2	2.503	19032			
3	3.237	6085			
4	3.378	66501			
5	3.643	20851			
6	3.841	18130			
7	4.079	89573			
8	4.852	47514			
9	5.262	5711			
10	5.518	555327	TCE	-2.87%	503
11	5.996	17152			
12	6.927	7146			
13	7.599	1063680			
14	7.991	5430			
15	8.439	13376			
16	8.701	6683			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.518	0.01	5.510	5.526

ORNL Environmental Sciences Divsion

G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\071898\002R0101.D		
Operator(s)	SR Cline		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	Cal. Check	**Injection Number**	1
Analysis Date	18 Jul 98 09:31 AM	**Instrument Method**	INEELECD.MTH
Report Date	18 Jul 98 09:44 AM	**Data Analysis Method**	INEELECD.MTH
Sample Name	50 ppb std		
Dilution Factor	1		
Signal	0		

Pk#	RetTime	Area		Drift	Conc. (ug/L)
0	0	0			
0	0	0			
1	1.072	8705			
2	3.434	25134			
3	3.639	5901			
4	3.851	14722			
5	4.165	58255			
6	4.855	49258			
7	5.523	68989	TCE	-12.34%	62
8	6.01	13091			
9	6.93	7733			
10	7.602	985076			
11	7.991	5341			
12	8.447	11492			
13	8.707	6192			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.523	0.01	5.515	5.531

ORNL Environmental Sciences Divsion

G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\071898\002R1101.D		
Operator(s)	SR Cline		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	Cal. Check	**Injection Number**	1
Analysis Date	18 Jul 98 09:23 PM	**Instrument Method**	INEELECD.MTH
Report Date	18 Jul 98 09:36 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	50 ppb std		
Dilution Factor	1		
Signal	0		

Pk#	RetTime	Area		Drift	Conc. (ug/L)
0	0	0			
0	0	0			
1	0.96	26349			
2	2.547	11976			
3	3.253	6313			
4	3.438	18322			
5	3.645	5408			
6	3.847	14588			
7	4.124	73879			
8	4.859	49043			
9	5.526	68783	TCE	-12.01%	62
10	6.007	16070			
11	6.932	8188			
12	7.605	998506			
13	7.993	5714			
14	8.446	11856			
15	8.708	6017			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.526	0.01	5.518	5.534

ORNL Environmental Sciences Divsion

G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\072098\002R0101.D		
Operator(s)	SR Cline		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	Cal. Check	**Injection Number**	1
Analysis Date	20 Jul 98 04:15 PM	**Instrument Method**	INEELECD.MTH
Report Date	20 Jul 98 04:27 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	50 ppb std		
Dilution Factor	1		
Signal	0		

Pk#	RetTime	Area		Drift	Conc. (ug/L)
0	0	0			
0	0	0			
1	1.219	5194			
2	3.431	20975			
3	3.632	5928			
4	3.846	16587			
5	4.208	54882			
6	4.852	49518			
7	5.517	70264	TCE	-14.42%	64
8	6.005	14166			
9	6.923	5063			
10	7.596	991486			
11	7.982	5468			
12	8.436	10881			
13	8.697	5931			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.517	0.01	5.509	5.525

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\072098\002R1201.D		
Operator(s)	SR Cline		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	Cal. Check	**Injection Number**	1
Analysis Date	21 Jul 98 00:39 AM	**Instrument Method**	INEELECD.MTH
Report Date	21 Jul 98 00:52 AM	**Data Analysis Method**	INEELECD.MTH
Sample Name	50 ppb std		
Dilution Factor	1		
Signal	0		

Pk#	RetTime	Area		Drift	Conc. (ug/L)
0	0	0			
0	0	0			
1	1.186	28044			
2	2.721	14217			
3	3.43	24171			
4	3.638	5735			
5	3.84	17948			
6	4.196	68570			
7	4.855	49175			
8	5.244	5418			
9	5.521	69229	TCE	-12.73%	63
10	6.008	16476			
11	6.928	7622			
12	7.6	997264			
13	7.988	5401			
14	8.441	11593			
15	8.702	6020			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.521	0.01	5.513	5.529

ORNL Environmental Sciences Divsion

G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\072198\002R0101.D		
Operator(s)	SR Cline		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	Cal. Check	**Injection Number**	1
Analysis Date	21 Jul 98 04:08 PM	**Instrument Method**	INEELECD.MTH
Report Date	21 Jul 98 04:20 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	50 ppb std		
Dilution Factor	1		
Signal	0		

Pk#	RetTime	Area		Drift	Conc. (ug/L)
1	3.253	6106			
2	3.434	19611			
3	3.637	5776			
4	3.851	14304			
5	4.146	60313			
6	4.852	49549			
7	5.518	70050	TCE	-14.07%	63
8	6.005	13737			
9	6.925	5274			
10	7.596	981961			
11	7.984	5024			
12	8.436	11497			
13	8.699	5924			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.518	0.01	5.510	5.526

ORNL Environmental Sciences Divsion

G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\072198\002R1401.D		
Operator(s)	SR Cline		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	Cal. Check	**Injection Number**	1
Analysis Date	22 Jul 98 00:19 AM	**Instrument Method**	INEELECD.MTH
Report Date	22 Jul 98 00:31 AM	**Data Analysis Method**	INEELECD.MTH
Sample Name	50 ppb std		
Dilution Factor	1		
Signal	0		

Pk#	RetTime	Area		Drift	Conc. (ug/L)
1	1.129	28922			
2	2.679	15161			
3	3.431	25387			
4	3.64	5823			
5	3.846	18649			
6	4.177	72434			
7	4.856	49833			
8	5.252	5565			
9	5.523	69867	TCE	-13.77%	63
10	6.012	16619			
11	6.93	7382			
12	7.602	989657			
13	7.991	5249			
14	8.443	11851			
15	8.705	6138			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.523	0.01	5.515	5.531

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\073098\002R0101.D		
Operator(s)	SR Cline		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	cal ck	**Injection Number**	1
Analysis Date	30 Jul 98 03:47 PM	**Instrument Method**	INEELECD.MTH
Report Date	30 Jul 98 03:59 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	1000ppb std (4/22/98)		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area		Drift	Conc. (ug/L)
1	0.962	19953			
2	2.545	8757			
3	3.378	128326			
4	3.641	61814			
5	4.126	82401			
6	4.854	47866			
7	5.52	1078205	TCE	-4.77%	976
8	6.006	15887			
9	6.927	6874			
10	7.601	948391			
11	8.441	10923			
12	8.703	5743			
13	7.991	5249			
14	8.443	11851			
15	8.705	6138			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.52	0.01	5.512	5.528

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\073098\002R0301.D		
Operator(s)	SR Cline		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	cal ck	**Injection Number**	1
Analysis Date	30 Jul 98 05:04 PM	**Instrument Method**	INEELECD.MTH
Report Date	30 Jul 98 05:17 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	1000ppb std (4/22/98)		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area		Drift	Conc. (ug/L)
1	0.99	34590			
2	2.575	15694			
3	3.375	131649			
4	3.639	62021			
5	4.131	89013			
6	4.852	47947			
7	5.517	1074777	TCE	-4.44%	973
8	6.003	18302			
9	7.598	938707			
10	8.437	11235			
11	8.699	5962			
12	8.703	5743			
13	7.991	5249			
14	8.443	11851			
15	8.705	6138			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.517	0.01	5.509	5.525

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\073198\002R0101.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	CAL CK	**Injection Number**	1
Analysis Date	31 Jul 98 04:22 PM	**Instrument Method**	INEELECD.MTH
Report Date	31 Jul 98 04:35 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	1000ppb std (4/22/98)		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area		Drift	Conc. (ug/L)
1	1.177	6607			
2	3.374	127709			
3	3.639	61055			
4	4.191	70286			
5	4.855	47902			
6	5.52	1080028	TCE	-4.95%	978
7	6.008	14698			
8	6.927	6691			
9	7.6	958158			
10	8.44	10912			
11	8.702	5724			
12	8.703	5743			
13	7.991	5249			
14	8.443	11851			
15	8.705	6138			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.52	0.01	5.512	5.528

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\073198\002R1901.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	CAL CK	**Injection Number**	1
Analysis Date	01 Aug 98 03:30 PM	**Instrument Method**	INEELECD.MTH
Report Date	01 Aug 98 03:43 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	1000ppb std (4/22/98)		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area		Drift	Conc. (ug/L)
1	1.119	28115			
2	2.679	14982			
3	3.374	121103			
4	3.637	35906			
5	3.822	23266			
6	4.175	81090			
7	4.854	47815			
8	5.256	5236			
9	5.518	1055574	TCE	-2.57%	956
10	6.009	17205			
11	6.927	7105			
12	7.599	993310			
13	8.438	11984			
14	8.702	5954			
15	8.705	6138			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.518	0.01	5.510	5.526

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\080398\002R0101.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	CAL CK	**Injection Number**	1
Analysis Date	03 Aug 98 04:44 PM	**Instrument Method**	INEELECD.MTH
Report Date	03 Aug 98 04:57 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	1000PPB STD (4/22/98)		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area		Drift	Conc. (ug/L)
1	3.376	128115			
2	3.634	60916			
3	4.051	7137			
4	4.22	55688			
5	4.852	48048			
6	5.515	1080761	TCE	-5.02%	978
7	6.005	14670			
8	7.595	950981			
9	8.433	10142			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.515	0.01	5.507	5.523

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\080398\002R1301.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	CAL CK	**Injection Number**	1
Analysis Date	04 Aug 98 07:27 AM	**Instrument Method**	INEELECD.MTH
Report Date	04 Aug 98 07:39 AM	**Data Analysis Method**	INEELECD.MTH
Sample Name	1000PPB STD (4/22/98)		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area		Drift	Conc. (ug/L)
1	1.42	19444			
2	2.888	9913			
3	3.377	121350			
4	3.64	60211			
5	4.298	75841			
6	4.86	47613			
7	5.525	1067484	TCE	-3.73%	966
8	6.016	15795			
9	6.934	8099			
10	7.608	980926			
11	8.448	11261			
12	8.711	5721			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.525	0.01	5.517	5.533

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\080498\002R0101.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	CAL CK	**Injection Number**	1
Analysis Date	04 Aug 98 04:43 PM	**Instrument Method**	INEELECD.MTH
Report Date	04 Aug 98 04:55 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	1000PPB STD (4/22/98)		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area		Drift	Conc. (ug/L)
1	3.38	127649			
2	3.638	61823			
3	4.056	7416			
4	4.253	59266			
5	4.857	48732			
6	5.521	1083609	TCE	-5.30%	981
7	6.011	14187			
8	7.602	956677			
9	8.441	10106			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.521	0.01	5.513	5.529

ORNL Environmental Sciences Divsion

G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\080498\002R1201.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	CAL CK	**Injection Number**	1
Analysis Date	04 Aug 98 08:08 PM	**Instrument Method**	INEELECD.MTH
Report Date	04 Aug 98 08:21 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	1000PPB STD (4/22/98)		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area		Drift	Conc. (ug/L)
1	1.269	19186			
2	2.769	9797			
3	3.38	125100			
4	3.639	62403			
5	4.227	78097			
6	4.858	48266			
7	5.523	1076631	TCE	-4.62%	975
8	6.011	15683			
9	6.931	6683			
10	7.604	963345			
11	8.444	10864			
12	8.708	5467			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.523	0.01	5.515	5.531

ORNL Environmental Sciences Divsion

G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\081298\002R0101.D		
Operator(s)	SR Cline		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	CAL CK	**Injection Number**	1
Analysis Date	12 Aug 98 03:52 PM	**Instrument Method**	INEELECD.MTH
Report Date	12 Aug 98 04:04 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	1000 PPB STD 4/22/98		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area		Drift	Conc. (ug/L)
1	3.384	123084			
2	3.64	59863			
3	4.058	6265			
4	4.191	50238			
5	4.854	45816			
6	5.518	1066236	TCE	-3.61%	965
7	6.01	10555			
8	7.601	934000			
9	8.439	9285			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.518	0.01	5.510	5.526

ORNL Environmental Sciences Divsion

G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\081298\002R1201.D		
Operator(s)	SR Cline		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	CAL CK	**Injection Number**	1
Analysis Date	13 Aug 98 06:40 AM	**Instrument Method**	INEELECD.MTH
Report Date	13 Aug 98 06:53 AM	**Data Analysis Method**	INEELECD.MTH
Sample Name	1000 PPB STD 4/22/98		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area		Drift	Conc. (ug/L)
1	3.383	116258			
2	3.639	59842			
3	4.257	59685			
4	4.855	46313			
5	5.521	1054553	TCE	-2.47%	955
6	6.013	11707			
7	7.604	949744			
8	8.444	9387			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.521	0.01	5.513	5.529

ORNL Environmental Sciences Divsion

G.C. Report

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\081298\001R0101.D		
Operator(s)	SR Cline		
Instrument	ANALYZER1	**Vial No.**	1
ORNL No.	BLANK	**Injection Number**	1
Analysis Date	12 Aug 98 03:41 PM	Instrument Method	INEELECD.MTH
Report Date	12 Aug 98 03:51 PM	Data Analysis Method	INEELECD.MTH
Sample Name	HEXANE		
Dilution Factor	1		

Signal		2			**G.C.**		**Sample**
Pk#	**RetTime**		**Area**	**VOC**	**Conc. (ug/L)**	**FLAG**	**Conc. (ug/L)**
1	3.927		13805	No I.D.			
2	4.214		222407	No I.D.			
3	4.582		20246	No I.D.			
4	5.522		7450	TCE	6.744		7
5	6.009		7595	No I.D.			
6	7.598		8043	No I.D.			
7	7.986		7797	No I.D.			
8	8.445		5969	No I.D.			

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G.C. Report

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\081298\001R0301.D		
Operator(s)	SR Cline		
Instrument	ANALYZER1	**Vial No.**	1
ORNL No.	BLANK	**Injection Number**	1
Analysis Date	12 Aug 98 06:26 PM	Instrument Method	INEELECD.MTH
Report Date	12 Aug 98 06:39 PM	Data Analysis Method	INEELECD.MTH
Sample Name	HEXANE		
Dilution Factor	1		

Signal		2			**G.C.**		**Sample**
Pk#	**RetTime**		**Area**	**VOC**	**Conc. (ug/L)**	**FLAG**	**Conc. (ug/L)**
1	3.396		5469	No I.D.			
2	3.851		15211	No I.D.			
3	4.204		217737	No I.D.			
4	4.588		19753	No I.D.			
5	5.333		8361	No I.D.			
6	5.527		8108	TCE	7.340		7
7	6.016		10302	No I.D.			
8	7.604		10094	No I.D.			
9	7.995		8090				
10	8.45		6743				

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G.C. Report

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\081298\001R0701.D		
Operator(s)	SR Cline		
Instrument	ANALYZER1	**Vial No.**	1
ORNL No.	BLANK	**Injection Number**	1
Analysis Date	12 Aug 98 11:36 PM	Instrument Method	INEELECD.MTH
Report Date	12 Aug 98 11:49 PM	Data Analysis Method	INEELECD.MTH
Sample Name	HEXANE		
Dilution Factor	1		

Signal		2			**G.C.**		**Sample**
Pk#		**RetTime**	**Area**	**VOC**	**Conc. (ug/L)**	**FLAG**	**Conc. (ug/L)**
	1	3.851	17189	No I.D.			
	2	4.215	210428	No I.D.			
	3	4.587	20967	No I.D.			
	4	5.524	7605	TCE	6.885		7
	5	6.015	10342	No I.D.			
	6	7.603	9949	No I.D.			
	7	7.995	6058	No I.D.			
	8	8.447	5878	No I.D.			

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G.C. Report

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\081298\001R0901.D		
Operator(s)	SR Cline		
Instrument	ANALYZER1	**Vial No.**	1
ORNL No.	BLANK	**Injection Number**	1
Analysis Date	13 Aug 98 02:11 AM	Instrument Method	INEELECD.MTH
Report Date	13 Aug 98 02:23 AM	Data Analysis Method	INEELECD.MTH
Sample Name	HEXANE		
Dilution Factor	1		

Signal		2			**G.C.**		**Sample**
Pk#	**RetTime**	**Area**		**VOC**	**Conc. (ug/L)**	**FLAG**	**Conc. (ug/L)**
1	3.853	13174		No I.D.			
2	4.21	212647		No I.D.			
3	4.585	20578		No I.D.			
4	5.327	6525		No I.D.			
5	5.525	7999		TCE	7.241		7
6	6.016	12280		No I.D.			
7	6.7	7325		No I.D.			
8	7.604	9816		No I.D.			
9	7.996	7770		No I.D.			
10	8.45	6186		No I.D.			

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G.C. Report

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\081298\001R0901.D		
Operator(s)	SR Cline		
Instrument	ANALYZER1	**Vial No.**	1
ORNL No.	BLANK	**Injection Number**	1
Analysis Date	13 Aug 98 02:11 AM	Instrument Method	INEELECD.MTH
Report Date	13 Aug 98 02:23 AM	Data Analysis Method	INEELECD.MTH
Sample Name	HEXANE		
Dilution Factor	1		

Signal		2			**G.C.**		**Sample**
Pk#	**RetTime**		**Area**	**VOC**	**Conc. (ug/L)**	**FLAG**	**Conc. (ug/L)**
1	3.853		13174	No I.D.			
2	4.21		212647	No I.D.			
3	4.585		20578	No I.D.			
4	5.327		6525	No I.D.			
5	5.525		7999	TCE	7.241		7
6	6.016		12280	No I.D.			
7	6.7		7325	No I.D.			
8	7.604		9816	No I.D.			
9	7.996		7770	No I.D.			
10	8.45		6186	No I.D.			

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G.C. Report

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\081298\001R1201.D		
Operator(s)	SR Cline		
Instrument	ANALYZER1	**Vial No.**	1
ORNL No.	BLANK	**Injection Number**	1
Analysis Date	13 Aug 98 06:27 AM	Instrument Method	INEELECD.MTH
Report Date	13 Aug 98 06:40 AM	Data Analysis Method	INEELECD.MTH
Sample Name	HEXANE		
Dilution Factor	1		

Signal	2			**G.C.**		**Sample**
Pk#	**RetTime**	**Area**	**VOC**	**Conc. (ug/L)**	**FLAG**	**Conc. (ug/L)**
1	3.91	17599	No I.D.			
2	4.213	215889	No I.D.			
3	4.586	21003	No I.D.			
4	5.523	7932	TCE	7.181		7
5	6.012	9939	No I.D.			
6	7.602	5870	No I.D.			
7	8.447	5223	No I.D.			

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G.C. Report

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\081298\001R1201.D		
Operator(s)	SR Cline		
Instrument	ANALYZER1	**Vial No.**	1
ORNL No.	BLANK	**Injection Number**	1
Analysis Date	13 Aug 98 06:27 AM	Instrument Method	INEELECD.MTH
Report Date	13 Aug 98 06:40 AM	Data Analysis Method	INEELECD.MTH
Sample Name	HEXANE		
Dilution Factor	1		

Signal		2			**G.C.**		**Sample**
Pk#		**RetTime**	**Area**	**VOC**	**Conc. (ug/L)**	**FLAG**	**Conc. (ug/L)**
	1	3.91	17599	No I.D.			
	2	4.213	215889	No I.D.			
	3	4.586	21003	No I.D.			
	4	5.523	7932	TCE	7.181		7
	5	6.012	9939	No I.D.			
	6	7.602	5870	No I.D.			
	7	8.447	5223	No I.D.			

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\081398\002R0101.D		
Operator(s)	SR Cline		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	CAL CK	**Injection Number**	1
Analysis Date	13 Aug 98 01:10 PM	**Instrument Method**	INEELECD.MTH
Report Date	13 Aug 98 01:23 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	1000 PPB STD 4/22/98		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area		Drift	Conc. (ug/L)
1	3.383	123492			
2	3.641	61343			
3	4.057	7129			
4	4.195	52351			
5	4.855	47562			
6	5.52	1072198	TCE	-4.19%	971
7	6.013	11701			
8	7.604	930917			
9	8.444	9646			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.52	0.01	5.512	5.528

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\081398\002R0501.D		
Operator(s)	SR Cline		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	CAL CK	**Injection Number**	1
Analysis Date	13 Aug 98 03:19 PM	**Instrument Method**	INEELECD.MTH
Report Date	13 Aug 98 03:32 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	1000 PPB STD 4/22/98		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area		Drift	Conc. (ug/L)
1	3.384	120072			
2	3.64	61763			
3	4.056	6785			
4	4.206	52159			
5	4.853	46341			
6	5.518	1063208	TCE	-3.31%	962
7	6.01	10411			
8	7.6	935809			
9	8.439	9497			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.518	0.01	5.510	5.526

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\081498\002R0101.D		
Operator(s)	SR Cline		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	CAL CK	**Injection Number**	1
Analysis Date	14 Aug 98 03:20 PM	**Instrument Method**	INEELECD.MTH
Report Date	14 Aug 98 03:33 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	1000 PPB STD 4/22/98		
Dilution Factor	1		
Signal	0		

Pk#	RetTime	Area		Drift	Conc. (ug/L)
0	0	0			
1	3.382	121569			
2	3.641	60085			
3	4.056	6467			
4	4.209	54031			
5	4.855	46558			
6	5.521	1067328	TCE	-3.71%	966
7	6.014	11598			
8	7.606	937642			
9	8.446	9583			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.521	0.01	5.513	5.529

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\081498\002R1301.D		
Operator(s)	SR Cline		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	CAL CK	**Injection Number**	1
Analysis Date	15 Aug 98 07:00 AM	**Instrument Method**	INEELECD.MTH
Report Date	15 Aug 98 07:13 AM	**Data Analysis Method**	INEELECD.MTH
Sample Name	1000 PPB STD 4/22/98		
Dilution Factor	1		
Signal	0		

Pk#	RetTime	Area		Drift	Conc. (ug/L)
0	0	0			
1	1.277	15118			
2	2.784	8832			
3	3.37	117512			
4	3.643	59124			
5	4.05	7016			
6	4.241	66528			
7	4.861	47645			
8	5.262	5030			
9	5.526	1061651	TCE	-3.16%	961
10	6.018	13028			
11	7.61	945994			
12	8.45	10015			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.526	0.01	5.518	5.534

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\081798\002R0101.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	CAL CK	**Injection Number**	1
Analysis Date	17 Aug 98 09:48 AM	**Instrument Method**	INEELECD.MTH
Report Date	17 Aug 98 10:01 AM	**Data Analysis Method**	INEELECD.MTH
Sample Name	1000 PPB STD (4/22/98)		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area		Drift	Conc. (ug/L)
1	3.361	120535			
2	3.639	58878			
3	4.046	6738			
4	4.171	20851			
5	4.318	34131			
6	4.858	46441			
7	5.523	1071803	TCE	-4.15%	970
8	6.015	7523			
9	7.605	946413			
10	8.444	9719			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.523	0.01	5.515	5.531

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\081798\002R1901.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	CAL CK	**Injection Number**	1
Analysis Date	18 Aug 98 11:03 AM	**Instrument Method**	INEELECD.MTH
Report Date	18 Aug 98 11:16 AM	**Data Analysis Method**	INEELECD.MTH
Sample Name	1000 PPB STD (4/22/98)		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area		Drift	Conc. (ug/L)
1	1.191	17568			
2	2.73	9466			
3	3.37	111854			
4	3.642	54695			
5	4.201	72760			
6	4.857	49006			
7	5.25	8898			
8	5.522	1042237	TCE	-1.28%	944
9	6.012	12653			
10	6.732	9751			
11	7.604	967266			
12	8.503	79812			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.522	0.01	5.514	5.530

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\081898\002R0101.D		
Operator(s)	SR Cline		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	calck	**Injection Number**	1
Analysis Date	18 Aug 98 03:07 PM	**Instrument Method**	INEELECD.MTH
Report Date	18 Aug 98 03:19 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	1000 ppb std (4/22/98)		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area		Drift	Conc. (ug/L)
1	3.366	120758			
2	3.64	58329			
3	4.156	63525			
4	4.855	48285			
5	5.519	1068705	TCE	-3.85%	967
6	6.011	7565			
7	7.601	928788			
8	8.44	10817			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.519	0.01	5.511	5.527

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\081898\002R0901.D		
Operator(s)	SR Cline		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	calck	**Injection Number**	1
Analysis Date	19 Aug 98 10:38 AM	**Instrument Method**	INEELECD.MTH
Report Date	19 Aug 98 10:50 AM	**Data Analysis Method**	INEELECD.MTH
Sample Name	1000 ppb std (4/22/98)		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area		Drift	Conc. (ug/L)
1	1.303	12318			
2	2.799	7159			
3	3.372	108719			
4	3.641	55299			
5	4.048	6497			
6	4.24	57112			
7	4.858	44635			
8	5.523	1045406	TCE	-1.58%	946
9	6.013	11404			
10	7.605	962098			
11	8.444	11634			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.523	0.01	5.515	5.531

ORNL Environmental Sciences Divsion

G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\081998\002R0101.D		
Operator(s)	SR Cline		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	cal ck	**Injection Number**	1
Analysis Date	19 Aug 98 03:36 PM	**Instrument Method**	INEELECD.MTH
Report Date	19 Aug 98 03:48 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	50 ppb std (4/22/98)		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area		Drift	Conc. (ug/L)
1	3.438	19600			
2	3.639	8831			
3	3.912	12846			
4	4.238	47353			
5	4.857	49194			
6	5.524	68674	TCE	-11.83%	62
7	6.012	8956			
8	7.604	948777			
9	8.446	10222			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.524	0.01	5.516	5.532

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\081998\002R0301.D		
Operator(s)	SR Cline		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	cal ck	**Injection Number**	1
Analysis Date	19 Aug 98 05:59 PM	**Instrument Method**	INEELECD.MTH
Report Date	19 Aug 98 06:12 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	50 ppb std (4/22/98)		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area		Drift	Conc. (ug/L)
1	1.42	5771			
2	3.444	17457			
3	3.639	6259			
4	3.85	15547			
5	4.293	51414			
6	4.858	47946			
7	5.526	67684	TCE	-10.22%	61
8	6.015	11805			
9	7.607	950652			
10	8.449	9869			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.526	0.01	5.518	5.534

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\082098\002R0101.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	Cal. Check	**Injection Number**	1
Analysis Date	20 Aug 98 03:18 PM	**Instrument Method**	INEELECD.MTH
Report Date	20 Aug 98 03:31 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	50 ppb calck		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area		Drift	Conc. (ug/L)
1	3.435	11839			
2	4.206	33187			
3	4.856	45061			
4	5.523	67915	TCE	-10.59%	61
5	6.01	10417			
6	7.603	958925			
7	8.444	9900			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.523	0.01	5.515	5.531

ORNL Environmental Sciences Divsion

G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\082098\002R1501.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	Cal. Check	**Injection Number**	1
Analysis Date	21 Aug 98 07:26 AM	**Instrument Method**	INEELECD.MTH
Report Date	21 Aug 98 07:37 AM	**Data Analysis Method**	INEELECD.MTH
Sample Name	50 ppb calck		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area		Drift	Conc. (ug/L)
1	3.432	16871			
2	3.643	5523			
3	3.857	15410			
4	4.189	46592			
5	4.86	48860			
6	5.526	67832	TCE	-10.46%	61
7	6.014	12749			
8	7.605	973278			
9	8.445	10371			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.526	0.01	5.518	5.534

ORNL Environmental Sciences Divsion

G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\082198\002R0101.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	Cal. Check	**Injection Number**	1
Analysis Date	21 Aug 98 01:15 PM	**Instrument Method**	INEELECD.MTH
Report Date	21 Aug 98 01:28 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	50 ppb calck		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area		Drift	Conc. (ug/L)
1	3.444	19689			
2	3.642	8695			
3	3.899	15301			
4	4.254	51561			
5	4.859	49253			
6	5.525	68166	TCE	-11.00%	62
7	6.014	8904			
8	7.604	955177			
9	8.445	10595			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.525	0.01	5.517	5.533

ORNL Environmental Sciences Divsion

G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\082198\002R0501.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	Cal. Check	**Injection Number**	1
Analysis Date	21 Aug 98 06:37 PM	**Instrument Method**	INEELECD.MTH
Report Date	21 Aug 98 06:50 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	50 ppb calck		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area		Drift	Conc. (ug/L)
1	1.138	9756			
2	3.427	21327			
3	3.644	5628			
4	3.849	16171			
5	4.184	57116			
6	4.856	48548			
7	5.524	67661	TCE	-10.18%	61
8	6.012	12105			
9	7.602	965517			
10	8.443	10647			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.524	0.01	5.516	5.532

ORNL Environmental Sciences Divsion

G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\082698\002R0101.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	Cal. Check	**Injection Number**	1
Analysis Date	26 Aug 98 03:25 PM	**Instrument Method**	INEELECD.MTH
Report Date	26 Aug 98 03:38 PM	**Data Analysis Method**	INEELECD.MTH
Sample Name	50 ppb calck		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area		Drift	Conc. (ug/L)
1	3.435	12347			
2	4.2	34273			
3	4.858	44271			
4	5.525	68326	TCE	-11.26%	62
5	6.012	9970			
6	7.603	974229			
7	8.443	9512			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.525	0.01	5.517	5.533

ORNL Environmental Sciences Divsion

G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site

Calibration Curve Date 4/22/98

FileName	C:\HPCHEM\1\DATA\082698\002R1501.D		
Operator(s)	SR CLINE		
Instrument	ANALYZER1	**Vial No.**	2
ORNL No.	Cal. Check	**Injection Number**	1
Analysis Date	27 Aug 98 07:32 AM	**Instrument Method**	INEELECD.MTH
Report Date	27 Aug 98 07:45 AM	**Data Analysis Method**	INEELECD.MTH
Sample Name	50 ppb calck		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area		Drift	Conc. (ug/L)
1	1.376	15677			
2	3.431	16248			
3	3.648	5156			
4	3.862	16059			
5	4.299	61354			
6	4.862	47911			
7	5.53	66396	TCE	-8.12%	60
8	6.018	12268			
9	7.61	979226			
10	8.449	10090			
11	8.713	6284			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
Vinyl Chloride				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.53	0.01	5.522	5.538

ORNL Environmental Sciences Divsion

G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 8/26/98

FileName	C:\HPCHEM\1\DATA\82898b\002R0101.D		
Operator(s)	Kitty McCracken		
Instrument	GC1	**Vial No.**	2
ORNL No.	cal chk	**Injection Number**	1
Analysis Date	28 Aug 98 04:02 PM	**Instrument Method**	INEEL.MTH
Report Date	28 Aug 98 04:16 PM	**Data Analysis Method**	INEEL.MTH
Sample Name	100 ppb std (8/26/98)		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	0.276	75			
2	0.324	113			
3	0.38	85			
4	0.412	104			
5	0.544	587			
6	0.726	1101			
7	0.821	588			
8	0.867	416			
9	0.985	1440			
10	1.189	8113			
11	1.414	15334			
12	1.703	4041			
13	1.907	11308			
14	2.236	45175	1,1-DCE	-7.4%	133
15	2.536	7630			
16	2.735	9290	Trans-1,2 DCE	-12.3%	169
17	3.493	1425	Cis-1,2 DCE	68.1%	-46
18	3.829	86863			
19	4.063	9105			
20	4.251	305			
21	5.176	288754	TCE	-3.6%	102
22	7.933	149372			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
1,1 DCE	2.236	0.005	2.231	2.241
Cis-1,2 DCE	3.493	0.003	3.490	3.496
Trans-1,2 DCE	2.735	0.005	2.730	2.740
TCE	5.176	0.022	5.154	5.198

ORNL Environmental Sciences Divsion

G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 8/26/98

FileName	C:\HPCHEM\1\DATA\082898b\002R0801.D		
Operator(s)	Kitty McCracken		
Instrument	GC1	**Vial No.**	2
ORNL No.	cal chk	**Injection Number**	1
Analysis Date	31 Aug 98 04:58 PM	**Instrument Method**	INEEL.MTH
Report Date	31 Aug 98 05:12 PM	**Data Analysis Method**	INEEL.MTH
Sample Name	100 ppb std (8/26/98)		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	1.176	23545			
2	1.403	29012			
3	1.9	12118			
4	2.23	46106	1,1-DCE	-9.6%	137
5	2.529	7738			
6	2.728	9446	Trans-1,2 DCE	-14.2%	173
7	3.243	2610			
8	3.484	4724	Cis-1,2 DCE	-5.8%	106
9	3.822	86421			
10	4.06	9715			
11	4.247	1007			
12	5.172	282107	TCE	-1.2%	99
13	5.641	22792			
14	6.74	18881			
15	7.929	142828			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
1,1 DCE	2.23	0.005	2.225	2.235
Cis-1,2 DCE	3.484	0.003	3.481	3.487
Trans-1,2 DCE	2.728	0.005	2.723	2.733
TCE	5.172	0.022	5.150	5.194

ORNL Environmental Sciences Divsion

G.C. Report

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date:

FileName	C:\HPCHEM\1\DATA\82898b\001R0301.D		
Operator(s)	Kitty McCracken		
Instrument	GC1	**Vial No.**	
ORNL No.	blank	**Injection Number**	
Analysis Date	28 Aug 98 06:45 PM	Instrument Method	INEEL.MTH
Report Date	30 Aug 98 09:29 AM	Data Analysis Method	INEEL.MTH
Sample Name	Hexane		
Dilution Factor	1		

Signal Pk#	RetTime	Area	VOC	G.C. Conc. (ug/L)	FLAG	Sample Conc. (ug/L)
1	0.061	44	No I.D.			
2	0.194	111	No I.D.			
3	0.408	503	No I.D.			
4	0.615	885	No I.D.			
5	0.659	417	No I.D.			
6	0.87	1140	No I.D.			
7	0.94	682	No I.D.			
8	1.053	969	No I.D.			
9	1.187	6206	No I.D.			
10	1.418	18600	No I.D.			
11	1.902	2527	No I.D.			
12	2.22	12778	No I.D.			
13	2.538	266	No I.D.			
14	3.24	2903	No I.D.			
15	3.393	2086	No I.D.			
16	3.83	446306	No I.D.			
17	4.269	5901	No I.D.			
18	5.177	11514	TCE	4.054	U	4
19	5.659	5148	No I.D.			
20	8.567	16395	No I.D.			

1,1-DCE Not Detected

Trans-1,2 DCE Not Detected

Cis-1,2 DCE Not Detected

ORNL Environmental Sciences Divsion

G.C. Report

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date:

FileName	C:\HPCHEM\1\DATA\82898b\001R0501.D		
Operator(s)	Kitty McCracken		
Instrument	GC1	**Vial No.**	
ORNL No.	blank	**Injection Number**	
Analysis Date	30 Aug 98 11:56 AM	Instrument Method	INEEL.MTH
Report Date	30 Aug 98 12:10 PM	Data Analysis Method	INEEL.MTH
Sample Name	Hexane		
Dilution Factor	1		

Signal Pk#	RetTime	Area 2	VOC	G.C. Conc. (ug/L)	FLAG	Sample Conc. (ug/L)
1	0.123	3	No I.D.			
2	0.16	3	No I.D.			
3	0.206	4	No I.D.			
4	0.243	2	No I.D.			
5	0.307	8	No I.D.			
6	0.41	32	No I.D.			
7	0.521	125	No I.D.			
8	0.646	423	No I.D.			
9	0.817	705	No I.D.			
10	0.86	430	No I.D.			
11	0.918	362	No I.D.			
12	0.992	512	No I.D.			
13	1.048	279	No I.D.			
14	1.081	401	No I.D.			
15	1.182	5704	No I.D.			
16	1.41	16007	No I.D.			
17	1.905	3185	No I.D.			
18	2.215	12109	No I.D.			
19	2.541	215	No I.D.			
20	3.241	4711	No I.D.			
21	3.825	315530	No I.D.			
22	4.231	2883	No I.D.			
23	5.17	597	TCE	0.210	U	0
24	8.518	10104	No I.D.			
25	9.083	537	No I.D.			
26	11.118	-1898	No I.D.			

1,1-DCE Not Detected

Trans-1,2 DCE Not Detected

Cis-1,2 DCE Not Detected

ORNL Environmental Sciences Divsion

G.C. Report

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date:

FileName	C:\HPCHEM\1\DATA\82898b\001R0701.D		
Operator(s)	Kitty McCracken		
Instrument	GC1	**Vial No.**	
ORNL No.	blank	**Injection Number**	
Analysis Date	30 Aug 98 02:38 PM	Instrument Method	INEEL.MTH
Report Date	30 Aug 98 02:53 PM	Data Analysis Method	INEEL.MTH
Sample Name	Hexane		
Dilution Factor	1		

Signal Pk#	RetTime	Area	VOC	G.C. Conc. (ug/L)	FLAG	Sample Conc. (ug/L)
1	0.158	126	No I.D.			
2	0.26	157	No I.D.			
3	0.323	119	No I.D.			
4	0.384	173	No I.D.			
5	0.47	302	No I.D.			
6	0.534	599	No I.D.			
7	0.685	457	No I.D.			
8	0.8	1089	No I.D.			
9	0.902	818	No I.D.			
10	0.987	381	No I.D.			
11	1.048	664	No I.D.			
12	1.191	6349	No I.D.			
13	1.411	15923	No I.D.			
14	1.905	3827	No I.D.			
15	2.215	12355	No I.D.			
16	2.54	159	No I.D.			
17	2.643	85	No I.D.			
18	3.24	4854	No I.D.			
19	3.823	316479	No I.D.			
20	4.233	5372	No I.D.			
21	5.171	6038	TCE	2.126	U	2
22	8.599	9381	No I.D.			
23	9.08	1667	No I.D.			
24	9.781	3383	No I.D.			

1,1-DCE Not Detected

Trans-1,2 DCE Not Detected

Cis-1,2 DCE Not Detected

ORNL Environmental Sciences Divsion

G.C. Report

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date:

FileName	C:\HPCHEM\1\DATA\82898b\001R0901.D		
Operator(s)	Kitty McCracken		
Instrument	GC1	**Vial No.**	
ORNL No.	blank	**Injection Number**	
Analysis Date	30 Aug 98 05:21 PM	Instrument Method	INEEL.MTH
Report Date	30 Aug 98 05:35 PM	Data Analysis Method	INEEL.MTH
Sample Name	Hexane		
Dilution Factor	1		

Signal Pk#	RetTime	Area 2	VOC	G.C. Conc. (ug/L)	FLAG	Sample Conc. (ug/L)
1	0.368	32	No I.D.			
2	0.521	28	No I.D.			
3	0.65	6	No I.D.			
4	0.777	33	No I.D.			
5	0.859	66	No I.D.			
6	1.185	4920	No I.D.			
7	1.432	6483	No I.D.			
8	1.904	4904	No I.D.			
9	2.218	10020	No I.D.			
10	2.447	432	No I.D.			
11	3.245	4403	No I.D.			
12	3.823	310341	No I.D.			
13	4.236	6002	No I.D.			
14	5.172	6641	TCE	2.338	U	2
15	5.773	2866	No I.D.			
16	8.628	7622	No I.D.			
17	10.168	5331	No I.D.			
18	10.824	2360	No I.D.			
19	11.102	1238	No I.D.			

1,1-DCE Not Detected

Trans-1,2 DCE Not Detected

Cis-1,2 DCE Not Detected

ORNL Environmental Sciences Divsion

G.C. Report

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date:

FileName	C:\HPCHEM\1\DATA\82898b\001R1101.D		
Operator(s)	Kitty McCracken		
Instrument	GC1	**Vial No.**	
ORNL No.	blank	**Injection Number**	
Analysis Date	30 Aug 98 08:03 PM	Instrument Method	INEEL.MTH
Report Date	30 Aug 98 08:18 PM	Data Analysis Method	INEEL.MTH
Sample Name	Hexane		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	G.C. Conc. (ug/L)	FLAG	Sample Conc. (ug/L)
1	0.156	2	No I.D.			
2	0.183	3	No I.D.			
3	0.821	-326	No I.D.			
4	0.926	9	No I.D.			
5	1.195	5474	No I.D.			
6	1.445	9080	No I.D.			
7	1.902	5571	No I.D.			
8	2.219	10050	No I.D.			
9	2.445	531	No I.D.			
10	3.249	4642	No I.D.			
11	3.822	309970	No I.D.			
12	4.234	8448	No I.D.			
13	5.173	18344	TCE	6.459	U	6
14	5.729	30969	No I.D.			
15	6.811	18859	No I.D.			
16	8.622	31290	No I.D.			
17	10.136	7287	No I.D.			
18	11.143	2109	No I.D.			

1,1-DCE Not Detected

Trans-1,2 DCE Not Detected

Cis-1,2 DCE Not Detected

ORNL Environmental Sciences Divsion

G.C. Report

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date:

FileName	C:\HPCHEM\1\DATA\082898b\001R0201.D		
Operator(s)	Kitty McCracken		
Instrument	GC1	**Vial No.**	
ORNL No.	blank	**Injection Number**	
Analysis Date	31 Aug 98 09:50 AM	Instrument Method	INEEL.MTH
Report Date	31 Aug 98 10:04 AM	Data Analysis Method	INEEL.MTH
Sample Name	Hexane		
Dilution Factor	1		

Signal Pk#	RetTime	Area 2	VOC	G.C. Conc. (ug/L)	FLAG	Sample Conc. (ug/L)
1	0.328	2	No I.D.			
2	0.56	8	No I.D.			
3	0.633	14	No I.D.			
4	0.824	24	No I.D.			
5	0.882	3	No I.D.			
6	1.176	4418	No I.D.			
7	1.404	4789	No I.D.			
8	1.59	2102	No I.D.			
9	1.899	1780	No I.D.			
10	2.21	5744	No I.D.			
11	2.527	5800	No I.D.			
12	3.236	2780	No I.D.			
13	3.386	2283	No I.D.			
14	3.821	83734	No I.D.			
15	4.055	8084	No I.D.			
16	4.364	1006	No I.D.			
17	7.923	105228	No I.D.			
18	8.503	15011	No I.D.			
19	9.068	2978	No I.D.			
20	9.598	10903	No I.D.			
21	10.174	2732	No I.D.			

1,1-DCE Not Detected

Trans-1,2 DCE Not Detected

Cis-1,2 DCE Not Detected

TCE Not Detected

ORNL Environmental Sciences Divsion

G.C. Report

Project Name *Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site*
Calibration Curve Date:

b	C:\HPCHEM\1\DATA\082898b\001R0401.D		
Operator(s)	Kitty McCracken		
Instrument	GC1	**Vial No.**	
ORNL No.	blank	**Injection Number**	
Analysis Date	31 Aug 98 12:32 PM	Instrument Method	INEEL.MTH
Report Date	31 Aug 98 12:46 PM	Data Analysis Method	INEEL.MTH
Sample Name	Hexane		
Dilution Factor	1		

Signal Pk#	RetTime	Area	VOC	G.C. Conc. (ug/L)	FLAG	Sample Conc. (ug/L)
1	0.095	1	No I.D.			
2	0.68	1077	No I.D.			
3	0.958	2095	No I.D.			
4	1.004	360	No I.D.			
5	1.082	1084	No I.D.			
6	1.178	6555	No I.D.			
7	1.411	6694	No I.D.			
8	1.9	5700	No I.D.			
9	2.207	7582	No I.D.			
10	2.528	5710	No I.D.			
11	3.241	5119	No I.D.			
12	3.821	84116	No I.D.			
13	4.057	8389	No I.D.			
14	4.354	1173	No I.D.			
15	7.925	109614	No I.D.			
16	8.547	23777	No I.D.			
17	9.068	3084	No I.D.			
18	9.58	12089	No I.D.			
19	10.176	2697	No I.D.			

1,1-DCE Not Detected

Trans-1,2 DCE Not Detected

Cis-1,2 DCE Not Detected

TCE Not Detected

ORNL Environmental Sciences Divsion

G.C. Report

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date:

FileName	C:\HPCHEM\1\DATA\082898b\001R0601.D		
Operator(s)	Kitty McCracken		
Instrument	GC1	**Vial No.**	
ORNL No.	blank	**Injection Number**	
Analysis Date	31 Aug 98 03:15 PM	Instrument Method	INEEL.MTH
Report Date	31 Aug 98 03:29 PM	Data Analysis Method	INEEL.MTH
Sample Name	Hexane		
Dilution Factor	1		

Signal Pk#	RetTime	2 Area	VOC	G.C. Conc. (ug/L)	FLAG	Sample Conc. (ug/L)
1	0.235	109	No I.D.			
2	0.415	429	No I.D.			
3	0.595	726	No I.D.			
4	0.937	2665	No I.D.			
5	1.176	7692	No I.D.			
6	1.4	18776	No I.D.			
7	1.898	5552	No I.D.			
8	2.206	7967	No I.D.			
9	2.528	5145	No I.D.			
10	3.237	5226	No I.D.			
11	3.82	83534	No I.D.			
12	4.057	9651	No I.D.			
13	4.361	3687	No I.D.			
14	5.171	5493	TCE	1.934	U	2
15	7.926	109787	No I.D.			
16	8.553	24407	No I.D.			
17	9.066	3600	No I.D.			
18	9.64	12845	No I.D.			
19	10.181	2959	No I.D.			

1,1-DCE Not Detected

Trans-1,2 DCE Not Detected

Cis-1,2 DCE Not Detected

ORNL Environmental Sciences Divsion

G.C. Report

Project Name *Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site*
Calibration Curve Date:

FileName	C:\HPCHEM\1\DATA\082898b\001R0801.D		
Operator(s)	Kitty McCracken		
Instrument	GC1	**Vial No.**	
ORNL No.	blank	**Injection Number**	
Analysis Date	31 Aug 98 04:43 PM	Instrument Method	INEEL.MTH
Report Date	31 Aug 98 04:58 PM	Data Analysis Method	INEEL.MTH
Sample Name	Hexane		
Dilution Factor	1		

Signal Pk#	RetTime	Area	VOC	G.C. Conc. (ug/L)	FLAG	Sample Conc. (ug/L)
1	0.134	6	No I.D.			
2	0.386	4	No I.D.			
3	0.59	-3	No I.D.			
4	0.988	46	No I.D.			
5	1.18	4040	No I.D.			
6	1.408	14729	No I.D.			
7	1.903	4127	No I.D.			
8	2.207	4175	No I.D.			
9	2.274	3141	No I.D.			
10	2.532	4821	No I.D.			
11	3.24	2861	No I.D.			
12	3.388	2373	No I.D.			
13	3.827	80692	No I.D.			
14	4.059	7022	No I.D.			
15	7.929	101940	No I.D.			
16	8.558	24873	No I.D.			
17	9.074	3088	No I.D.			
18	9.637	10889	No I.D.			
19	10.188	2386	No I.D.			

1,1-DCE Not Detected

Trans-1,2 DCE Not Detected

Cis-1,2 DCE Not Detected

TCE Not Detected

ORNL Environmental Sciences Divsion

G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 8/26/98

FileName	C:\HPCHEM\1\DATA\090198\002R0101.D		
Operator(s)	SR Cline		
Instrument	GC1	**Vial No.**	2
ORNL No.	cal chk	**Injection Number**	1
Analysis Date	01 Sep 98 05:05 PM	**Instrument Method**	INEEL.MTH
Report Date	02 Sep 98 08:21 AM	**Data Analysis Method**	INEEL.MTH
Sample Name	100 ppb std (8/26/98)		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	0.44	23			
2	0.519	17			
3	0.76	125			
4	0.851	342			
5	0.923	269			
6	1.014	412			
7	1.063	391			
8	1.175	6188			
9	1.42	3257			
10	1.893	15546			
11	2.22	40823	1,1-DCE	2.9%	114
12	2.52	6907			
13	2.718	8488	Trans-1,2 DCE	-2.6%	147
14	3.222	2394			
15	3.475	4068	Cis-1,2 DCE	8.9%	76
16	3.808	86579			
17	4.041	9527			
18	4.225	1161			
19	5.152	285052	TCE	-2.3%	100
20	7.908	129304			
21	8.267	1745			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
1,1 DCE	2.22	0.005	2.215	2.225
Cis-1,2 DCE	3.475	0.003	3.472	3.478
Trans-1,2 DCE	2.718	0.005	2.713	2.723
TCE	5.152	0.022	5.130	5.174

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 8/26/98

FileName	C:\HPCHEM\1\DATA\090198\002R0301.D		
Operator(s)	SR Cline		
Instrument	GC1	**Vial No.**	2
ORNL No.	cal chk	**Injection Number**	1
Analysis Date	02 Sep 98 10:19 AM	**Instrument Method**	INEEL.MTH
Report Date	02 Sep 98 10:33 AM	**Data Analysis Method**	INEEL.MTH
Sample Name	100 ppb std (8/26/98)		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area		Drift	Conc. (ug/L)
1	0.455	244			
2	0.553	105			
3	0.615	318			
4	1.036	3114			
5	1.173	7604			
6	1.4	12015			
7	1.743	4169			
8	1.897	11707			
9	2.226	44657	1,1-DCE	-6.2%	131
10	2.526	7523			
11	2.724	9425	Trans-1,2 DCE	-13.9%	173
12	3.818	87141			
13	4.054	9619	Cis-1,2 DCE	NOT DETECTED	
14	4.24	1085			
15	5.165	287419	TCE	-3.2%	101
16	7.922	139746			
17	8.567	27268			
18	9.059	4642			
19	9.578	15119			
20	10.164	3689			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
1,1 DCE	2.226	0.005	2.221	2.231
Cis-1,2 DCE	ND	0.003	NA	NA
Trans-1,2 DCE	2.724	0.005	2.719	2.729
TCE	5.165	0.022	5.143	5.187

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G.C. Report

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 8/26/98

FileName	C:\HPCHEM\1\DATA\090198\001R0101.D		
Operator(s)	SR Cline		
Instrument	GC1	**Vial No.**	1
ORNL No.	blank	**Injection Number**	1
Analysis Date	01 Sep 98 04:32 PM	Instrument Method	INEEL.MTH
Report Date	01 Sep 98 05:04 PM	Data Analysis Method	INEEL.MTH
Sample Name	Hexane		
Dilution Factor	1		

Signal		2			G.C.		Sample
Pk#	**RetTime**	**Area**		**VOC**	**Conc. (ug/L)**	**FLAG**	**Conc. (ug/L)**
1	0.038	10		No I.D.			
2	0.128	74		No I.D.			
3	0.17	197		No I.D.			
4	0.28	89		No I.D.			
5	0.316	97		No I.D.			
6	0.403	534		No I.D.			
7	0.53	409		No I.D.			
8	0.576	565		No I.D.			
9	0.783	1095		No I.D.			
10	0.84	455		No I.D.			
11	0.901	564		No I.D.			
12	1.178	8395		No I.D.			
13	1.426	3948		No I.D.			
14	1.903	8942		No I.D.			
15	2.216	10279		1,1-DCE	-21.478	U	-21
16	2.465	181		No I.D.			
17	2.521	275		No I.D.			
18	3.235	2751		No I.D.			
19	3.385	1745		No I.D.			
20	3.822	439806		No I.D.			
21	4.244	2292		No I.D.			
22	8.027	974		No I.D.			
23	8.291	1597		No I.D.			
24	8.487	411		No I.D.			
25	10.481	1067		No I.D.			
26	10.926	4788		No I.D.			

Trans-1,2 DCE Not Detected

Cis-1,2 DCE Not Detected

TCE Not Detected

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G.C. Report

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 8/26/98

FileName	C:\HPCHEM\1\DATA\090198\001R0301.D		
Operator(s)	SR Cline		
Instrument	GC1	**Vial No.**	1
ORNL No.	blank	**Injection Number**	1
Analysis Date	02 Sep 98 10:04 AM	Instrument Method	INEEL.MTH
Report Date	02 Sep 98 10:19 AM	Data Analysis Method	INEEL.MTH
Sample Name	Hexane		
Dilution Factor	1		

Signal Pk#	RetTime	Area	VOC	G.C. Conc. (ug/L)	FLAG	Sample Conc. (ug/L)
	2					
1	0.148	15	No I.D.			
2	0.205	136	No I.D.			
3	0.546	970	No I.D.			
4	0.635	290	No I.D.			
5	0.84	1479	No I.D.			
6	1.04	1557	No I.D.			
7	1.167	6665	No I.D.			
8	1.398	15208	No I.D.			
9	1.893	2938	No I.D.			
10	2.207	12692	No I.D.			
11	2.527	276	No I.D.			
12	3.235	4846	No I.D.			
13	3.813	413838	No I.D.			
14	4.234	2186	No I.D.			
15	8.566	17805	No I.D.			

1,1-DCE Not Detected

Trans-1,2 DCE Not Detected

Cis-1,2 DCE Not Detected

TCE Not Detected

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 8/26/98

FileName	C:\HPCHEM\1\DATA\090298\002R0101.D		
Operator(s)	Kitty McCracken		
Instrument	GC1	**Vial No.**	2
ORNL No.	cal chk	**Injection Number**	1
Analysis Date	02 Sep 98 02:02 PM	**Instrument Method**	INEEL.MTH
Report Date	02 Sep 98 02:16 PM	**Data Analysis Method**	INEEL.MTH
Sample Name	100 ppb std (8/26/98)		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	0.202	6			
2	0.366	2			
3	0.59	-3			
4	0.63	24			
5	0.743	28			
6	0.865	287			
7	0.899	300			
8	1.175	6967			
9	1.403	8319			
10	1.75	3531			
11	1.9	11729			
12	2.229	43527	1,1-DCE	-3.5%	126
13	2.529	7208			
14	2.728	9179	Trans-1,2 DCE	-11.0%	166
15	3.822	86278	Cis-1,2 DCE	**NOT DETECTED**	
16	4.061	9152			
17	4.246	432			
18	5.174	286034	TCE	-2.7%	101
19	7.933	137433			
20	8.6	21165			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
1,1 DCE	2.229	0.005	2.224	2.234
Cis-1,2 DCE	ND	0.003	NA	NA
Trans-1,2 DCE	2.728	0.005	2.723	2.733
TCE	5.174	0.022	5.152	5.196

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 8/26/98

FileName	C:\HPCHEM\1\DATA\090298\002R1901.D		
Operator(s)	Kitty McCracken		
Instrument	GC1	**Vial No.**	2
ORNL No.	cal chk	**Injection Number**	1
Analysis Date	03 Sep 98 01:19 PM	**Instrument Method**	INEEL.MTH
Report Date	03 Sep 98 01:34 PM	**Data Analysis Method**	INEEL.MTH
Sample Name	100 ppb std (8/26/98)		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	0.078	2			
2	0.57	382			
3	0.657	395			
4	0.71	274			
5	1.183	11531			
6	1.439	5691			
7	1.77	3295			
8	1.898	14477			
9	2.227	44714	1,1-DCE	-6.3%	131
10	2.526	7713			
11	2.724	9237	Trans-1,2 DCE	-11.7%	168
12	3.236	2810			
13	3.476	4685	Cis-1,2 DCE	-5.0%	105
14	3.817	89106			
15	4.055	10332			
16	4.242	1308			
17	5.167	288830	TCE	-3.7%	102
18	7.923	150293			
19	8.582	29369			
20	9.059	4004			
21	9.586	14836			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
1,1 DCE	2.227	0.005	2.222	2.232
Cis-1,2 DCE	3.476	0.003	3.473	3.479
Trans-1,2 DCE	2.724	0.005	2.719	2.729
TCE	5.167	0.022	5.145	5.189

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G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 8/26/98

FileName	C:\HPCHEM\1\DATA\090298\090R2001.D		
Operator(s)	Kitty McCracken		
Instrument	GC1	**Vial No.**	90
ORNL No.	CAL CK	**Injection Number**	1
Analysis Date	03 Sep 98 01:34 PM	**Instrument Method**	INEEL.MTH
Report Date	03 Sep 98 01:48 PM	**Data Analysis Method**	INEEL.MTH
Sample Name	500 PPB CAL CK (8/26/98)		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	1.182	27391			
2	1.43	9694			
3	1.74	4550			
4	1.895	11200			
5	2.07	2365			
6	2.222	159683	1,1-DCE	-8.8%	640
7	2.524	8946			
8	2.72	26975	Trans-1,2 DCE	-8.9%	656
9	3.239	2418			
10	3.478	15814	Cis-1,2 DCE	-2.9%	619
11	3.814	89936			
12	4.056	10034			
13	4.248	965			
14	5.166	1359907	TCE	-4.2%	479
15	5.604	19196			
16	6.711	20199			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
1,1 DCE	2.222	0.005	2.217	2.227
Cis-1,2 DCE	3.478	0.003	3.475	3.481
Trans-1,2 DCE	2.72	0.005	2.715	2.725
TCE	5.166	0.022	5.144	5.188

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G.C. Report

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 8/26/98

FileName	C:\HPCHEM\1\DATA\090298\001R0101.D		
Operator(s)	Kitty McCracken		
Instrument	GC1	**Vial No.**	1
ORNL No.	blank	**Injection Number**	1
Analysis Date	02 Sep 98 01:48 PM	Instrument Method	INEEL.MTH
Report Date	02 Sep 98 02:02 PM	Data Analysis Method	INEEL.MTH
Sample Name	Hexane		
Dilution Factor	1		

Signal Pk#	RetTime	Area	VOC	G.C. Conc. (ug/L)	FLAG	Sample Conc. (ug/L)
1	0.362	0	No I.D.			
2	0.385	5	No I.D.			
3	0.602	4	No I.D.			
4	0.696	15	No I.D.			
5	0.81	39	No I.D.			
6	0.873	204	No I.D.			
7	1.103	770	No I.D.			
8	1.176	5016	No I.D.			
9	1.406	6541	No I.D.			
10	1.902	6467	No I.D.			
11	2.214	12482	No I.D.			
12	2.54	350	No I.D.			
13	3.238	3222	No I.D.			
14	3.385	2884	No I.D.			
15	3.824	450723	No I.D.			
16	4.252	9939	No I.D.			
17	5.169	31215	TCE	10.991	U	11
18	5.663	13839	No I.D.			
19	6.298	19103	No I.D.			
20	6.575	3344	No I.D.			
21	6.845	7005	No I.D.			
22	7.24	6333	No I.D.			
23	7.55	6618	No I.D.			
24	7.748	4899	No I.D.			
25	8.027	2683	No I.D.			
26	8.298	2643	No I.D.			
27	8.766	10056	No I.D.			
28	9.415	13231	No I.D.			
29	9.731	7597	No I.D.			
30	10.162	4347	No I.D.			
31	10.799	24031	No I.D.			

1,1-DCE Not Detected

Trans-1,2 DCE Not Detected

Cis-1,2 DCE Not Detected

ORNL Environmental Sciences Divsion

G.C. Report

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 8/26/98

FileName	C:\HPCHEM\1\DATA\090298\001R0301.D		
Operator(s)	Kitty McCracken		
Instrument	GC1	**Vial No.**	1
ORNL No.	blank	**Injection Number**	1
Analysis Date	02 Sep 98 04:44 PM	Instrument Method	INEEL.MTH
Report Date	02 Sep 98 04:59 PM	Data Analysis Method	INEEL.MTH
Sample Name	Hexane		
Dilution Factor	1		

Signal Pk#	RetTime	Area	VOC	G.C. Conc. (ug/L)	FLAG	Sample Conc. (ug/L)
1	0.242	3	No I.D.			
2	0.369	63	No I.D.			
3	0.587	3	No I.D.			
4	0.711	11	No I.D.			
5	0.79	8	No I.D.			
6	1.042	25	No I.D.			
7	1.175	3798	No I.D.			
8	1.398	13334	No I.D.			
9	1.892	2173	No I.D.			
10	2.208	11976	No I.D.			
11	2.525	340	No I.D.			
12	3.235	5065	No I.D.			
13	3.814	441707	No I.D.			
14	4.343	2212	No I.D.			
15	8.524	16126	No I.D.			

1,1-DCE Not Detected

Trans-1,2 DCE Not Detected

Cis-1,2 DCE Not Detected

TCE Not Detected

ORNL Environmental Sciences Divsion

G.C. Report

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 8/26/98

FileName	C:\HPCHEM\1\DATA\090298\001R0501.D		
Operator(s)	Kitty McCracken		
Instrument	GC1	**Vial No.**	1
ORNL No.	blank	**Injection Number**	1
Analysis Date	02 Sep 98 07:27 PM	Instrument Method	INEEL.MTH
Report Date	02 Sep 98 07:41 PM	Data Analysis Method	INEEL.MTH
Sample Name	Hexane		
Dilution Factor	1		

Signal Pk#	RetTime	Area	VOC	G.C. Conc. (ug/L)	FLAG	Sample Conc. (ug/L)
1	0.075	5	No I.D.			
2	0.62	12	No I.D.			
3	0.743	3	No I.D.			
4	1.021	1	No I.D.			
5	1.174	3740	No I.D.			
6	1.399	12195	No I.D.			
7	1.894	2401	No I.D.			
8	2.207	12262	No I.D.			
9	2.523	336	No I.D.			
10	3.239	5102	No I.D.			
11	3.812	445123	No I.D.			
12	4.33	2261	No I.D.			
13	8.302	1363	No I.D.			
14	8.798	5896	No I.D.			
15	9.744	5802	No I.D.			

1,1-DCE Not Detected

Trans-1,2 DCE Not Detected

Cis-1,2 DCE Not Detected

TCE Not Detected

ORNL Environmental Sciences Divsion

G.C. Report

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 8/26/98

FileName	C:\HPCHEM\1\DATA\090298\001R0701.D		
Operator(s)	Kitty McCracken		
Instrument	GC1	**Vial No.**	1
ORNL No.	blank	**Injection Number**	1
Analysis Date	02 Sep 98 10:09 PM	Instrument Method	INEEL.MTH
Report Date	02 Sep 98 10:23 PM	Data Analysis Method	INEEL.MTH
Sample Name	Hexane		
Dilution Factor	1		

Signal Pk#	RetTime	Area	VOC	G.C. Conc. (ug/L)	FLAG	Sample Conc. (ug/L)
1	0.496	3262	No I.D.			
2	0.62	5407	No I.D.			
3	1.172	5722	No I.D.			
4	1.397	15345	No I.D.			
5	1.89	2517	No I.D.			
6	2.204	13061	No I.D.			
7	2.519	257	No I.D.			
8	3.24	5897	No I.D.			
9	3.807	437080	No I.D.			
10	4.238	8657	No I.D.			
11	5.16	26012	TCE	9.159	U	9
12	5.684	12506	No I.D.			
13	6.241	16941	No I.D.			
14	6.568	2905	No I.D.			
15	6.836	5891	No I.D.			
16	7.226	4948	No I.D.			
17	7.537	5257	No I.D.			
18	7.738	4231	No I.D.			
19	8.293	1388	No I.D.			
20	8.71	7366	No I.D.			
21	9.065	3441	No I.D.			
22	9.708	9904	No I.D.			
23	10.143	2908	No I.D.			

1,1-DCE Not Detected

Trans-1,2 DCE Not Detected

Cis-1,2 DCE Not Detected

ORNL Environmental Sciences Divsion

G.C. Report

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 8/26/98

FileName	C:\HPCHEM\1\DATA\090298\001R1101.D		
Operator(s)	Kitty McCracken		
Instrument	GC1	**Vial No.**	1
ORNL No.	blank	**Injection Number**	1
Analysis Date	03 Sep 98 03:31 AM	Instrument Method	INEEL.MTH
Report Date	03 Sep 98 03:45 AM	Data Analysis Method	INEEL.MTH
Sample Name	Hexane		
Dilution Factor	1		

Signal Pk#	RetTime	Area	VOC	G.C. Conc. (ug/L)	FLAG	Sample Conc. (ug/L)
1	0.239	3	No I.D.			
2	0.313	7	No I.D.			
3	0.414	5	No I.D.			
4	0.557	22	No I.D.			
5	0.817	16	No I.D.			
6	1.173	4138	No I.D.			
7	1.407	4217	No I.D.			
8	1.641	2446	No I.D.			
9	1.89	3815	No I.D.			
10	2.206	10133	No I.D.			
11	2.443	147	No I.D.			
12	2.511	132	No I.D.			
13	2.729	6	Trans-1,2 DC	-86.458	U	-86
14	3.236	5085	No I.D.			
15	3.806	428830	No I.D.			
16	4.237	4835	No I.D.			
17	5.157	5962	TCE	2.099	U	2
18	8.288	1559	No I.D.			
19	8.689	6955	No I.D.			
20	9.796	10479	No I.D.			
21	10.15	1908	No I.D.			

1,1-DCE Not Detected

Cis-1,2 DCE Not Detected

ORNL Environmental Sciences Divsion

G.C. Report

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 8/26/98

FileName	C:\HPCHEM\1\DATA\090298\001R1301.D		
Operator(s)	Kitty McCracken		
Instrument	GC1	**Vial No.**	1
ORNL No.	blank	**Injection Number**	1
Analysis Date	03 Sep 98 06:12 AM	Instrument Method	INEEL.MTH
Report Date	03 Sep 98 06:26 AM	Data Analysis Method	INEEL.MTH
Sample Name	Hexane		
Dilution Factor	1		

Signal Pk#	RetTime	Area 2	VOC	G.C. Conc. (ug/L)	FLAG	Sample Conc. (ug/L)
1	0.075	4	No I.D.			
2	0.115	3	No I.D.			
3	0.193	5	No I.D.			
4	0.452	8	No I.D.			
5	0.57	8	No I.D.			
6	0.65	8	No I.D.			
7	0.802	18	No I.D.			
8	0.88	10	No I.D.			
9	0.937	5	No I.D.			
10	1.04	13	No I.D.			
11	1.173	4011	No I.D.			
12	1.42	3432	No I.D.			
13	1.694	3197	No I.D.			
14	1.891	4886	No I.D.			
15	2.206	11419	No I.D.			
16	2.442	816	No I.D.			
17	2.512	2212	No I.D.			
18	3.23	5018	No I.D.			
19	3.807	418966	No I.D.			
20	4.233	2464	No I.D.			
21	8.288	1693	No I.D.			
22	8.82	6738	No I.D.			
23	9.832	11253	No I.D.			
24	10.158	2070	No I.D.			

1,1-DCE Not Detected

Trans-1,2 DCE Not Detected

Cis-1,2 DCE Not Detected

TCE Not Detected

ORNL Environmental Sciences Divsion

G.C. Report

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 8/26/98

FileName	C:\HPCHEM\1\DATA\090298\001R1501.D		
Operator(s)	Kitty McCracken		
Instrument	GC1	**Vial No.**	1
ORNL No.	blank	**Injection Number**	1
Analysis Date	03 Sep 98 08:54 AM	Instrument Method	INEEL.MTH
Report Date	03 Sep 98 09:08 AM	Data Analysis Method	INEEL.MTH
Sample Name	Hexane		
Dilution Factor	1		

Signal Pk#	RetTime	Area	VOC	G.C. Conc. (ug/L)	FLAG	Sample Conc. (ug/L)
1	0.568	-34	No I.D.			
2	0.956	90	No I.D.			
3	1.049	19	No I.D.			
4	1.174	3228	No I.D.			
5	1.422	1609	No I.D.			
6	1.895	1560	No I.D.			
7	2.21	9230	No I.D.			
8	2.444	100	No I.D.			
9	3.233	2795	No I.D.			
10	3.383	2341	No I.D.			
11	3.811	415224	No I.D.			
12	4.234	2574	No I.D.			
13	5.162	2235	TCE	0.787	U	1
14	8.488	21414	No I.D.			
15	9.548	7603	No I.D.			

1,1-DCE Not Detected

Trans-1,2 DCE Not Detected

Cis-1,2 DCE Not Detected

ORNL Environmental Sciences Divsion

G.C. Report

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 8/26/98

FileName	C:\HPCHEM\1\DATA\090298\001R1701.D		
Operator(s)	Kitty McCracken		
Instrument	GC1	**Vial No.**	1
ORNL No.	blank	**Injection Number**	1
Analysis Date	03 Sep 98 11:36 AM	Instrument Method	INEEL.MTH
Report Date	03 Sep 98 11:50 AM	Data Analysis Method	INEEL.MTH
Sample Name	Hexane		
Dilution Factor	1		

Signal Pk#	RetTime	Area	VOC	G.C. Conc. (ug/L)	FLAG	Sample Conc. (ug/L)
1	0.256	-1	No I.D.			
2	0.378	2	No I.D.			
3	0.452	10	No I.D.			
4	0.617	19	No I.D.			
5	0.872	51	No I.D.			
6	0.934	5	No I.D.			
7	0.975	2	No I.D.			
8	1.179	3296	No I.D.			
9	1.428	1753	No I.D.			
10	1.664	77	No I.D.			
11	1.895	1600	No I.D.			
12	2.211	9032	No I.D.			
13	2.443	1237	No I.D.			
14	3.24	5158	No I.D.			
15	3.814	412409	No I.D.			
16	4.234	2544	No I.D.			
17	5.167	314	TCE	0.111	U	0
18	8.487	22461	No I.D.			
19	9.544	11219	No I.D.			
20	10.173	1783	No I.D.			

1,1-DCE Not Detected

Trans-1,2 DCE Not Detected

Cis-1,2 DCE Not Detected

ORNL Environmental Sciences Divsion

G.C. Report

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 8/26/98

FileName	C:\HPCHEM\1\DATA\090298\001R1901.D		
Operator(s)	Kitty McCracken		
Instrument	GC1	**Vial No.**	1
ORNL No.	blank	**Injection Number**	1
Analysis Date	03 Sep 98 01:04 PM	Instrument Method	INEEL.MTH
Report Date	03 Sep 98 01:19 PM	Data Analysis Method	INEEL.MTH
Sample Name	Hexane		
Dilution Factor	1		

Signal Pk#	RetTime	Area	VOC	G.C. Conc. (ug/L)	FLAG	Sample Conc. (ug/L)
		2				
1	0.08	3	No I.D.			
2	0.223	39	No I.D.			
3	0.442	558	No I.D.			
4	0.805	2701	No I.D.			
5	1.184	10651	No I.D.			
6	1.442	12011	No I.D.			
7	1.893	7355	No I.D.			
8	2.21	13265	No I.D.			
9	2.442	4556	No I.D.			
10	3.237	5163	No I.D.			
11	3.813	412636	No I.D.			
12	4.234	2627	No I.D.			
13	8.593	20585	No I.D.			

1,1-DCE Not Detected

Trans-1,2 DCE Not Detected

Cis-1,2 DCE Not Detected

TCE Not Detected

ORNL Environmental Sciences Divsion

G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 8/26/98

FileName	C:\HPCHEM\1\DATA\091698\002R0101.D		
Operator(s)	SR CLINE		
Instrument	GC1	**Vial No.**	2
ORNL No.	cal chk	**Injection Number**	1
Analysis Date	16 Sep 98 04:35 PM	**Instrument Method**	INEEL.MTH
Report Date	16 Sep 98 04:49 PM	**Data Analysis Method**	INEEL.MTH
Sample Name	100 ppb std (8/26/98)		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	0.17	22			
2	0.311	117			
3	1.185	17443			
4	1.423	5935			
5	1.75	3711			
6	1.892	13745			
7	2.221	45384	1,1-DCE		
8	2.52	7944			
9	2.718	10044	Trans-1,2 DCE		
10	3.473	1074	Cis-1,2 DCE		
11	3.808	84441			
12	4.046	7998			
13	4.229	377			
14	5.158	288462	TCE	-3.5%	102
15	5.556	13007			
16	6.671	14314			
17	7.913	149977			
18	8.515	79009			
19	9.491	15322			
20	10.143	3077			
21	10.987	-1353			
22	11.177	2167			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
1,1 DCE				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.158	0.022	5.136	5.180

ORNL Environmental Sciences Divsion

G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 8/26/98

FileName	C:\HPCHEM\1\DATA\091698\002R0501.D		
Operator(s)	SR CLINE		
Instrument	GC1	**Vial No.**	2
ORNL No.	cal chk	**Injection Number**	1
Analysis Date	16 Sep 98 09:15 PM	**Instrument Method**	INEEL.MTH
Report Date	16 Sep 98 09:30 PM	**Data Analysis Method**	INEEL.MTH
Sample Name	100 ppb std (8/26/98)		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	0.306	521			
2	0.4	455			
3	0.555	1069			
4	0.779	2459			
5	0.802	558			
6	0.864	1049			
7	1.204	14823			
8	1.462	13899			
9	1.905	14900			
10	2.236	46571	1,1-DCE		
11	2.533	8359			
12	2.73	10233	Trans-1,2 DCE		
13	3.821	87529			
14	4.048	8863			
15	4.23	445			
16	5.157	294055	TCE	-5.5%	104
17	5.666	17990			
18	6.754	18708			
19	7.911	158003			
20	8.576	94429			
21	9.537	16169			
22	10.148	2100			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
1,1 DCE				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.157	0.022	5.135	5.179

ORNL Environmental Sciences Divsion

G.C. Report

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 8/26/98

FileName	C:\HPCHEM\1\DATA\091698\001R0101.D		
Operator(s)	SR CLINE		
Instrument	GC1	**Vial No.**	1
ORNL No.	blank	**Injection Number**	1
Analysis Date	16 Sep 98 04:21 PM	Instrument Method	INEEL.MTH
Report Date	16 Sep 98 04:34 PM	Data Analysis Method	INEEL.MTH
Sample Name	Hexane		
Dilution Factor	1		

Signal Pk#	RetTime	2 Area	VOC	G.C. Conc. (ug/L)	FLAG	Sample Conc. (ug/L)
1	0.11	5	No I.D.			
2	0.246	186	No I.D.			
3	0.398	223	No I.D.			
4	0.482	437	No I.D.			
5	0.581	495	No I.D.			
6	0.632	431	No I.D.			
7	0.686	610	No I.D.			
8	0.789	1068	No I.D.			
9	0.867	729	No I.D.			
10	0.952	844	No I.D.			
11	1.035	1684	No I.D.			
12	1.189	5421	No I.D.			
13	1.287	3046	No I.D.			
14	1.405	4905	No I.D.			
15	1.891	10805	No I.D.			
16	2.201	10847	No I.D.			
17	2.516	15700	No I.D.			
18	2.883	3232	No I.D.			
19	3.375	5263	No I.D.			
20	3.805	79354	No I.D.			
21	4.039	13544	No I.D.			
22	7.908	284551	No I.D.			
23	8.273	2030	No I.D.			
24	8.785	7240	No I.D.			
25	9.052	3304	No I.D.			
26	9.739	9266	No I.D.			
27	10.145	3248	No I.D.			

TCE Not Detected

ORNL Environmental Sciences Divsion

G.C. Report

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 8/26/98

FileName	C:\HPCHEM\1\DATA\091698\001R0301.D		
Operator(s)	SR CLINE		
Instrument	GC1	**Vial No.**	1
ORNL No.	blank	**Injection Number**	1
Analysis Date	16 Sep 98 07:32 PM	Instrument Method	INEEL.MTH
Report Date	16 Sep 98 07:46 PM	Data Analysis Method	INEEL.MTH
Sample Name	Hexane		
Dilution Factor	1		

Signal Pk#	RetTime	2 Area	VOC	G.C. Conc. (ug/L)	FLAG	Sample Conc. (ug/L)
1	0.248	4	No I.D.			
2	0.37	20	No I.D.			
3	0.404	12	No I.D.			
4	0.468	12	No I.D.			
5	0.511	7	No I.D.			
6	0.548	12	No I.D.			
7	0.61	12	No I.D.			
8	0.65	20	No I.D.			
9	0.782	19	No I.D.			
10	0.837	9	No I.D.			
11	0.867	7	No I.D.			
12	0.898	18	No I.D.			
13	0.992	43	No I.D.			
14	1.073	133	No I.D.			
15	1.101	96	No I.D.			
16	1.193	3822	No I.D.			
17	1.301	1725	No I.D.			
18	1.446	3991	No I.D.			
19	1.904	10560	No I.D.			
20	2.215	8066	No I.D.			
21	2.529	15636	No I.D.			
22	2.888	3142	No I.D.			
23	3.246	5557	No I.D.			
24	3.821	84096	No I.D.			
25	4.05	18435	No I.D.			
26	4.86	12944	No I.D.			
27	5.158	1957	TCE	0.689	U	1
28	6.524	7153	No I.D.			

ORNL Environmental Sciences Divsion

G.C. Report

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 8/26/98

FileName	C:\HPCHEM\1\DATA\091698\001R0501.D		
Operator(s)	SR CLINE		
Instrument	GC1	**Vial No.**	1
ORNL No.	blank	**Injection Number**	1
Analysis Date	16 Sep 98 09:01 PM	Instrument Method	INEEL.MTH
Report Date	16 Sep 98 09:15 PM	Data Analysis Method	INEEL.MTH
Sample Name	Hexane		
Dilution Factor	1		

Signal Pk#	RetTime	2 Area	VOC	G.C. Conc. (ug/L)	FLAG	Sample Conc. (ug/L)
1	0.184	164	No I.D.			
2	0.305	91	No I.D.			
3	0.336	99	No I.D.			
4	0.423	406	No I.D.			
5	0.5	335	No I.D.			
6	0.58	707	No I.D.			
7	0.672	624	No I.D.			
8	0.751	1192	No I.D.			
9	0.851	522	No I.D.			
10	0.935	1314	No I.D.			
11	1.016	814	No I.D.			
12	1.058	614	No I.D.			
13	1.199	8960	No I.D.			
14	1.448	6275	No I.D.			
15	1.904	10972	No I.D.			
16	2.073	1184	No I.D.			
17	2.213	9282	No I.D.			
18	2.53	16202	No I.D.			
19	2.887	2872	No I.D.			
20	3.244	5498	No I.D.			
21	3.82	82576	No I.D.			
22	4.049	16456	No I.D.			
23	4.246	1080	No I.D.			
24	5.159	944	TCE	0.332	U	0
25	5.603	3947	No I.D.			
26	6.721	6249	No I.D.			
27	7.913	318597	No I.D.			
28	8.54	17851	No I.D.			

ORNL Environmental Sciences Divsion

G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 8/26/98

FileName	C:\HPCHEM\1\DATA\091798\002R0101.D		
Operator(s)	SR CLINE		
Instrument	GC1	**Vial No.**	2
ORNL No.	cal chk	**Injection Number**	1
Analysis Date	17 Sep 98 02:41 PM	**Instrument Method**	INEEL.MTH
Report Date	17 Sep 98 02:55 PM	**Data Analysis Method**	INEEL.MTH
Sample Name	100 ppb std (8/26/98)		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	0.066	36			
2	0.651	3518			
3	0.83	2642			
4	1.214	15382			
5	1.459	5882			
6	1.628	5802			
7	1.913	11517			
8	2.246	44409	1,1-DCE		
9	2.544	8075			
10	2.74	10289	Trans-1,2 DCE		
11	3.833	85207			
12	4.062	8481			
13	4.242	806			
14	5.173	298839	TCE	-7.3%	105
15	5.635	14210			
16	6.732	14698			
17	7.927	161560			
18	8.566	88849			
19	9.539	18136			
20	10.149	3222			
21	10.992	3827			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
1,1 DCE				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.173	0.022	5.151	5.195

ORNL Environmental Sciences Divsion

G.C. Report-Calibration Check

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 8/26/98

FileName	C:\HPCHEM\1\DATA\091798\002R0301.D		
Operator(s)	SR CLINE		
Instrument	GC1	**Vial No.**	2
ORNL No.	cal chk	**Injection Number**	1
Analysis Date	17 Sep 98 03:54 PM	**Instrument Method**	INEEL.MTH
Report Date	17 Sep 98 04:09 PM	**Data Analysis Method**	INEEL.MTH
Sample Name	100 ppb std (8/26/98)		
Dilution Factor	1		
Signal	2		

Pk#	RetTime	Area	VOC	Drift	Conc. (ug/L)
1	0.513	479			
2	0.574	102			
3	0.633	151			
4	0.693	97			
5	0.743	88			
6	0.787	111			
7	1.208	3992			
8	1.452	2274			
9	1.625	389			
10	1.913	8306			
11	2.246	42897	1,1-DCE		
12	2.541	7075			
13	2.739	9457	Trans-1,2 DCE		
14	3.831	87173			
15	4.056	8979			
16	4.237	543			
17	5.167	303075	TCE	-8.8%	107
18	6.536	17315			
19	7.921	145932			
20	8.422	79816			
21	9.41	5121			
22	10.451	11805			
23	10.968	362			
24	11.15	4862			

Retention Time Windows

VOC	Daily Absolute RT	RT Window Width	Min RT	Max RT
1,1 DCE				
Cis-1,2 DCE				
Trans-1,2 DCE				
TCE	5.167	0.022	5.145	5.189

ORNL Environmental Sciences Divsion

G.C. Report

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 8/26/98

FileName	C:\HPCHEM\1\DATA\091798\001R0101.D		
Operator(s)	SR CLINE		
Instrument	GC1	**Vial No.**	1
ORNL No.	blank	**Injection Number**	1
Analysis Date	17 Sep 98 02:20 PM	Instrument Method	INEEL.MTH
Report Date	17 Sep 98 02:40 PM	Data Analysis Method	INEEL.MTH
Sample Name	Hexane		
Dilution Factor	1		

Signal Pk#	RetTime	2 Area	VOC	G.C. Conc. (ug/L)	FLAG	Sample Conc. (ug/L)
1	0.191	243	No I.D.			
2	0.237	144	No I.D.			
3	0.268	91	No I.D.			
4	0.38	696	No I.D.			
5	0.44	379	No I.D.			
6	0.511	387	No I.D.			
7	0.545	199	No I.D.			
8	0.59	374	No I.D.			
9	0.622	820	No I.D.			
10	0.744	648	No I.D.			
11	0.876	1796	No I.D.			
12	0.94	609	No I.D.			
13	1.036	1433	No I.D.			
14	1.118	1144	No I.D.			
15	1.208	8310	No I.D.			
16	1.446	3717	No I.D.			
17	1.629	3696	No I.D.			
18	1.91	4341	No I.D.			
19	2.227	8353	No I.D.			
20	2.537	13984	No I.D.			
21	3.251	5559	No I.D.			
22	3.826	81855	No I.D.			
23	4.055	17020	No I.D.			
24	4.231	1677	No I.D.			
25	7.925	334671	No I.D.			
26	8.289	1814	No I.D.			
27	8.473	566	No I.D.			

TCE Not Detected

ORNL Environmental Sciences Divsion

G.C. Report

Project Name Laboratory Evaluation of In Situ Chemical Oxidation as a Technology for Groundwater Remediation at the INEEL TAN Site
Calibration Curve Date 8/26/98

FileName	C:\HPCHEM\1\DATA\091798\001R0301.D		
Operator(s)	SR CLINE		
Instrument	GC1	**Vial No.**	1
ORNL No.	blank	**Injection Number**	1
Analysis Date	17 Sep 98 03:40 PM	Instrument Method	INEEL.MTH
Report Date	17 Sep 98 03:54 PM	Data Analysis Method	INEEL.MTH
Sample Name	Hexane		
Dilution Factor	1		

Signal Pk#	RetTime	2 Area	VOC	G.C. Conc. (ug/L)	FLAG	Sample Conc. (ug/L)
1	0.216	81	No I.D.			
2	0.293	160	No I.D.			
3	0.426	645	No I.D.			
4	0.673	1704	No I.D.			
5	0.741	826	No I.D.			
6	0.801	781	No I.D.			
7	0.9	873	No I.D.			
8	0.94	756	No I.D.			
9	0.996	729	No I.D.			
10	1.066	821	No I.D.			
11	1.207	8489	No I.D.			
12	1.457	4953	No I.D.			
13	1.626	911	No I.D.			
14	1.912	7927	No I.D.			
15	2.222	10345	No I.D.			
16	2.538	14424	No I.D.			
17	3.25	5693	No I.D.			
18	3.828	80860	No I.D.			
19	4.056	17294	No I.D.			
20	4.234	1582	No I.D.			
21	5.168	2700	TCE	0.951	U	1
22	5.452	3500	No I.D.			
23	7.922	327251	No I.D.			
24	8.474	18121	No I.D.			
25	9.854	306	No I.D.			
26	10.505	14569	No I.D.			
27	11.106	6173	No I.D.			

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