

The order of this data package is as follows:

1. Chain-of-Custody/Lab Request
2. Copies of field COCs
3. Validation Report
4. Laboratory analysis

Comments:

Validation report not required for EES samples.

[illegible]

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11212

EVENT NAME: Mortandad/Sandia (Cr Inv/MDA C)
MY2017 Q3

SAMPLE ID: CAMO-17-132523

WORK ORDER:

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
Date Collected (MM/DD/YYYY):	05/18/2017	OK	FIELD MATRIX:	WG	OK
TIME COLLECTED (HH:MM):	1153		MEDIA:	UA	
PRS ID:	OK		SAMPLE TECH CODE:	GSP	
LOCATION ID:	R-44 S1		FIELD PREP:	F	
LOCATION TYPE:	OK		FIELD QC TYPE:	REG	
TOP DEPTH:			SAMPLE USAGE:	INV	
BOTTOM DEPTH:			EXCAVATED:		YES / <input checked="" type="radio"/> NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
NA	WSP-All Metals	1 LITER POLY	1	HNO3 ICE	Y	NA
	WSP-CR52/53	1 LITER POLY	1	ICE		
	WSP- GENINORG+PerChlorat e	1 LITER POLY	1	ICE		
	WSP-N15/O18- NO3	40 ML SEPTUM AMBER GLASS	2	ICE		
	WSP- NH3+NO3/NO2	500 ML AMBER GLASS	1	H2SO4		

SAMPLE COMMENTS:

LOCATION COMMENTS:

FIELD PARAMETERS:

Sample Time _____ HH:MM _____ Dissolved Oxygen 5/18/2017 Flow (in gpm) _____
 Oxidation-Reduction Potential _____ pH _____ Specific Conductance _____
 Temperature _____ Turbidity _____

COLLECTED BY (PRINT): M. Slendo & D. Jaramila

RELINQUISHED BY (Printed Name) <u>Maurice Slendo</u> (Signature) <u>[Signature]</u>	Date/Time <u>05/18/2017</u> <u>1445</u>	RECEIVED BY <u>Sherwood</u> (Printed Name) <u>[Signature]</u> (Signature) <u>[Signature]</u>	Date/Time <u>5/18/17</u> <u>1445</u>
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11212

EVENT NAME: Mortandad/Sandia (Cr Inv/MDA C)
MY2017 Q3

SAMPLE ID: CAMO-17-132953

WORK ORDER:

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
Date Collected (MM/DD/YYYY):	05/18/2017	OK	FIELD MATRIX:	W	OK
TIME COLLECTED (HH:MM):	11 53		MEDIA:	UA	
PRS ID:	OK		SAMPLE TECH CODE:	GSP	
LOCATION ID:	R-44 S1		FIELD PREP:	UF	
LOCATION TYPE:	OK		FIELD QC TYPE:	TEST	
TOP DEPTH:			SAMPLE USAGE:	TRACER	
BOTTOM DEPTH:			EXCAVATED:		YES / <u>NO</u> / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
NA	WSP-EES- Tracers(CrStudy)+D2H	40 mL Glass	2	NONE	Y	NA

SAMPLE COMMENTS:

LOCATION COMMENTS:

FIELD PARAMETERS:

Sample Time _____ HH:MM Dissolved Oxygen _____ Flow (in gpm) _____
Oxidation-Reduction Potential _____ pH _____ Specific Conductance _____
Temperature _____ Turbidity _____

COLLECTED BY (PRINT): M. Skudo & D. Jaramila

RELINQUISHED BY (Printed Name) Maurice Skudo (Signature) <i>Maurice Skudo</i>	Date/Time 05/18/2017 1445	RECEIVED BY (Printed Name) S. Sherwood (Signature) <i>S. Sherwood</i>	Date/Time 5/18/17 1445
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date: 04/27/2017

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11212

EVENT NAME: Mortandad/Sandia (Cr Inv/MDA C)
MY2017 Q3

SAMPLE ID: CAMO-17-132954

WORK ORDER:

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
Date Collected (MM/DD/YYYY):	05/18/2017	OK	FIELD MATRIX:	W	OK
TIME COLLECTED (HH:MM):	1337 1137 5/18/17B		MEDIA:	UA	
PRS ID:	OK		SAMPLE TECH CODE:	GSP	
LOCATION ID:	R-44 S2		FIELD PREP:	UF	
LOCATION TYPE:	OK		FIELD QC TYPE:	TEST	
TOP DEPTH:			SAMPLE USAGE:	TRACER	
BOTTOM DEPTH:			EXCAVATED:		YES / <u>NO</u> / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
MA	WSP-EES- Tracers(CrStudy)+D2H	40 mL Glass	2	NONE	Y	MA

SAMPLE COMMENTS:

LOCATION COMMENTS:

FIELD PARAMETERS:

Sample Time _____ HH:MM _____ Dissolved Oxygen _____ Flow (in gpm) _____
Oxidation-Reduction Potential _____ pH _____ Specific Conductance _____
Temperature _____ Turbidity _____

COLLECTED BY (PRINT): M. Skoda & D. Jaramilla

RELINQUISHED BY (Printed Name) <u>Daniel Jaramilla</u> (Signature) <u>[Signature]</u>	Date/Time 05/18/2017 1455	RECEIVED BY <u>Shawwood</u> (Printed Name) <u>[Signature]</u> (Signature) <u>[Signature]</u>	Date/Time 5/18/17 1455
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date: 04/27/2017

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11212

EVENT NAME: Mortandad/Sandia (Cr Inv/MDA C)
MY2017 Q3

SAMPLE ID: CAMO-17-132958

WORK ORDER:

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
Date Collected (MM/DD/YYYY):	05-18-2017	OK	FIELD MATRIX:	W	OK
TIME COLLECTED (HH:MM):	12:48		MEDIA:	UA	
PRS ID:	NA		SAMPLE TECH CODE:	GSP	
LOCATION ID:	R-50 S2		FIELD PREP:	UF	
LOCATION TYPE:	NA		FIELD QC TYPE:	TEST	
TOP DEPTH:	1		SAMPLE USAGE:	TRACER	
BOTTOM DEPTH:			EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
NA	WSP-EES- Tracers(CrStudy)+D2H	40 mL Glass	2	NONE	Y	NA

SAMPLE COMMENTS:

LOCATION COMMENTS:

FIELD PARAMETERS:

Sample Time _____ HH:MM _____ Dissolved Oxygen 05-18-17 Flow (in gpm) _____
Oxidation-Reduction Potential _____ pH _____ Specific Conductance _____
Temperature _____ Turbidity _____

COLLECTED BY (PRINT): A. Stanfield, T. Walker

RELINQUISHED BY (Printed Name) (Signature)	Tam Walker T.E. Walker	Date/Time 5/18/17 1345	RECEIVED BY (Printed Name) (Signature)	Shenwood Shenwood	Date/Time 5/18/17 1345
RELINQUISHED BY (Printed Name) (Signature)		Date/Time	RECEIVED BY (Printed Name) (Signature)		Date/Time

Report Date: 04/27/2017

[illegible]

Los Alamos National Laboratory

EES-14 Hydrology, Geochemistry, and Geology Laboratory

MS-D469, Building 494, Los Alamos, NM. 87545

COC ID	LAB SAMPLE ID	ANALYSIS METHOD	ANALYTE CODE	RESULT	MDL	LAB QUALIFIER	QC_BATCH_ID	ANALYSIS DATE
2017-1561	CAMO-17-132953	SW-846:8330	130-14-3	0.0020	0.00200	U	TRACERS20170523	5/23/2017
2017-1561	CAMO-17-132953	SW-846:8330	1655-29-4	0.0020	0.00200	U	TRACERS20170523	5/23/2017
2017-1561	CAMO-17-132953	SW-846:8330	1655-35-2	0.0020	0.00200	U	TRACERS20170523	5/23/2017
2017-1561	CAMO-17-132953	SW-846:8330	1655-43-2	0.0020	0.00200	U	TRACERS20170523	5/23/2017
2017-1561	CAMO-17-132953	SW-846:8330	1655-45-4	0.0020	0.00200	U	TRACERS20170523	5/23/2017
2017-1561	CAMO-17-132953	SW-846:8330	5182-30-9	0.0020	0.00200	U	TRACERS20170523	5/23/2017
2017-1561	CAMO-17-132953	SW-846:8330	532-02-5	0.0020	0.00200	U	TRACERS20170523	5/23/2017
2017-1561	CAMO-17-132953	SW-846:8330	6654-64-2	0.0020	0.00200	U	TRACERS20170523	5/23/2017
2017-1561	CAMO-17-132954	SW-846:8330	130-14-3	0.0020	0.00200	U	TRACERS20170523	5/23/2017
2017-1561	CAMO-17-132954	SW-846:8330	1655-29-4	0.0020	0.00200	U	TRACERS20170523	5/23/2017
2017-1561	CAMO-17-132954	SW-846:8330	1655-35-2	0.0020	0.00200	U	TRACERS20170523	5/23/2017
2017-1561	CAMO-17-132954	SW-846:8330	1655-43-2	0.0020	0.00200	U	TRACERS20170523	5/23/2017
2017-1561	CAMO-17-132954	SW-846:8330	1655-45-4	0.0020	0.00200	U	TRACERS20170523	5/23/2017
2017-1561	CAMO-17-132954	SW-846:8330	5182-30-9	0.0020	0.00200	U	TRACERS20170523	5/23/2017
2017-1561	CAMO-17-132954	SW-846:8330	532-02-5	0.0020	0.00200	U	TRACERS20170523	5/23/2017
2017-1561	CAMO-17-132954	SW-846:8330	6654-64-2	0.0020	0.00200	U	TRACERS20170523	5/23/2017
2017-1561	CAMO-17-132958	SW-846:8330	130-14-3	0.0020	0.00200	U	TRACERS20170523	5/23/2017
2017-1561	CAMO-17-132958	SW-846:8330	1655-29-4	0.0020	0.00200	U	TRACERS20170523	5/23/2017
2017-1561	CAMO-17-132958	SW-846:8330	1655-35-2	0.0020	0.00200	U	TRACERS20170523	5/23/2017
2017-1561	CAMO-17-132958	SW-846:8330	1655-43-2	0.0020	0.00200	U	TRACERS20170523	5/23/2017
2017-1561	CAMO-17-132958	SW-846:8330	1655-45-4	0.0020	0.00200	U	TRACERS20170523	5/23/2017

COC ID	LAB SAMPLE ID	ANALYSIS METHOD	ANALYTE CODE	RESULT	MDL	LAB QUALIFIER	QC_BATCH_ID	ANALYSIS DATE
2017-1561	CAMO-17-132958	SW-846:8330	5182-30-9	0.0020	0.00200	U	TRACERS20170523	5/23/2017
2017-1561	CAMO-17-132958	SW-846:8330	532-02-5	0.0020	0.00200	U	TRACERS20170523	5/23/2017
2017-1561	CAMO-17-132958	SW-846:8330	6654-64-2	0.0020	0.00200	U	TRACERS20170523	5/23/2017

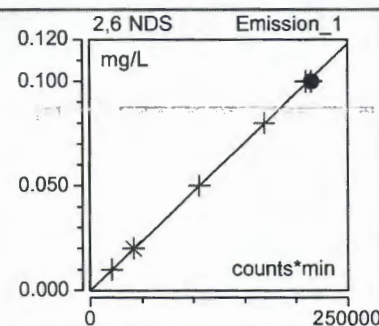
Name	RDS 2016 RAMP: Right pump						
Comment	RDS 2016 RAMP						
Description	Instrument: U3000						
Run time	Creation Time: 16/20/14 04:27 PM						
Instrument	Created by: Los Alamos National						
	50,000 (min)						
	U3000 on Los Alamos						
No.	Injection Name	Position	Type	Comment (System Injection)	Level	Inject Time	Comment
7	check std 10 ppb	RA3	Unknown	n.a.		23/May/17 14:08:58	
8	check std 1 ppb	RA5	Unknown	n.a.		23/May/17 14:59:52	
9	di waTER	RA4	Unknown	n.a.		23/May/17 15:50:46	
10	CAMO-17-132953	RA6	Unknown	2017-1539		23/May/17 16:41:39	2017-1561
11	CAMO-17-132954	RA7	Unknown	2017-1545		23/May/17 17:32:33	2017-1561
12	CAMO-17-132958	RA8	Unknown	2017-1548		23/May/17 18:23:27	2017-1561
13	WST16-17-136953	RB1	Unknown	2017-1584		23/May/17 19:14:21	2017-1584
14	di waTER	RA4	Unknown	n.a.		23/May/17 20:05:14	

Calibration Batch Report

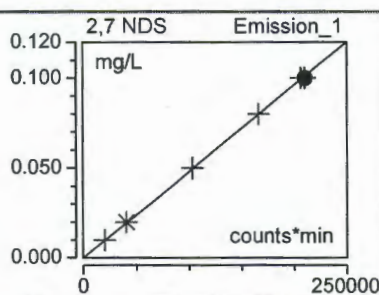
Sequence:	05232017 NDS-EP	Injection Volume:	50.00
Instrument Method:	NDS 2016 RAMP - Right pump	Operator:	Los Alamos National
Inj. Date / Time:	23-May-2017 / 09:03	Run Time:	50.016633

Calibration Summary							
Peak Name	Eval.Type	Cal.Type	Points	Offset (C0)	Slope (C1)	Curve (C2)	Coeff.Det. %
2,6 NDS	Area	Lin	5.000	0.000	0.000	0.000	99.9387
1,5 NDS	Area	Lin	5.000	0.000	0.000	0.000	99.9053
2,7 NDS	Area	Lin	5.000	0.000	0.000	0.000	99.9626
1,6 NDS	Area	Lin	5.000	0.000	0.000	0.000	99.8834
1 NS	Area	Lin	5.000	0.000	0.000	0.000	99.5342
2 NS	Area	Lin	5.000	0.000	0.000	0.000	99.9149
1,3,6 NTS	Area	Lin	5.000	0.000	0.000	0.000	99.7391
1,3,5 NTS	Area	Lin	5.000	0.000	0.000	0.000	99.2335
AVERAGE:				0.0000	0.0000	0.0000	99.7640

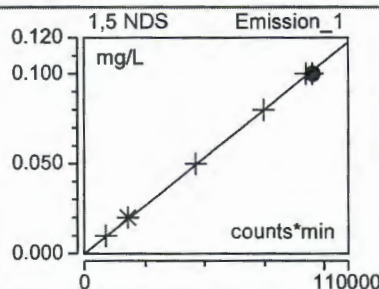
Injection Name	Ret.Time min	Area counts*min	Height counts	Amount mg/L
	Emission 1	Emission 1	Emission 1	Emission 1
100 ppb	2,6 NDS	2,6 NDS	2,6 NDS	2,6 NDS
	7.150	#####	729413.295	0.101
20 ppb	7.150	#####	146310.421	0.020
50 ppb	7.200	#####	362158.984	0.050
10 ppb	7.167	#####	72560.774	0.010
80 ppb	7.217	#####	573828.158	0.080
100 ppb	7.217	#####	705045.916	0.099
Average	7.183			
Rel. Std. Dev.	0.440 %			



Injection Name	Ret.Time min	Area counts*min	Height counts	Amount mg/L
	Emission 1	Emission 1	Emission 1	Emission 1
100 ppb	2,7 NDS	2,7 NDS	2,7 NDS	2,7 NDS
	11.467	#####	474564.689	0.101
20 ppb	11.517	#####	94732.056	0.019
50 ppb	11.583	#####	235607.987	0.050
10 ppb	11.567	#####	46349.714	0.010
80 ppb	11.567	#####	373161.250	0.080
100 ppb	11.567	#####	460667.078	0.099
Average	11.544			
Rel. Std. Dev.	0.384 %			

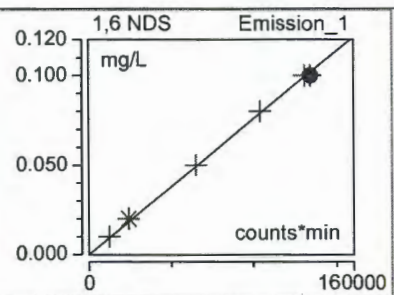


Injection Name	Ret.Time min	Area counts*min	Height counts	Amount mg/L
	Emission 1	Emission 1	Emission 1	Emission 1
100 ppb	1,5 NDS	1,5 NDS	1,5 NDS	1,5 NDS
	8.167	#####	284054.242	0.102
20 ppb	8.183	#####	57470.258	0.019
50 ppb	8.233	#####	141880.952	0.049
10 ppb	8.217	8743.7750	28340.531	0.009
80 ppb	8.250	#####	224719.410	0.080
100 ppb	8.250	#####	276353.410	0.099

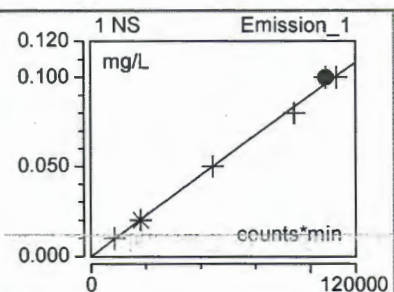


Average	8.217
Rel. Std. Dev.	0.425 %

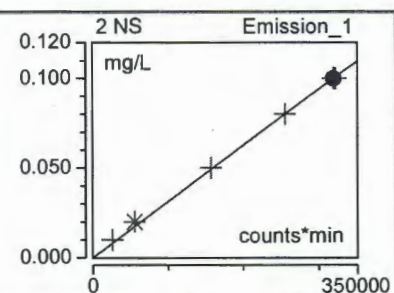
Injection Name	Ret. Time min Emission 1	Area counts*min Emission 1	Height counts Emission 1	Amount mg/L Emission 1	
	1,6 NDS	1,6 NDS	1,6 NDS	1,6 NDS	
100 ppb	12.617	#####	275853.251	0.102	
20 ppb	12.700	#####	53244.458	0.018	
50 ppb	12.750	#####	135458.745	0.049	
10 ppb	12.750	#####	26419.000	0.009	
80 ppb	12.733	#####	212679.875	0.079	
100 ppb	12.733	#####	263014.022	0.099	
Average	12.714				
Rel. Std. Dev.	0.401 %				



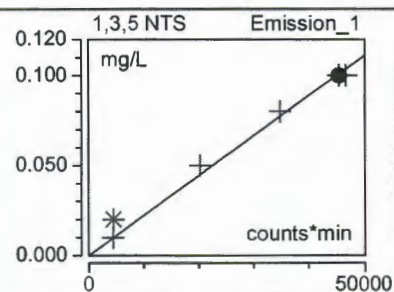
Injection Name	Ret. Time min Emission 1	Area counts*min Emission 1	Height counts Emission 1	Amount mg/L Emission 1	
	1 NS	1 NS	1 NS	1 NS	
100 ppb	19.217	#####	138535.256	0.096	
20 ppb	19.317	#####	31148.140	0.020	
50 ppb	19.350	#####	73695.743	0.050	
10 ppb	19.350	#####	15084.655	0.009	
80 ppb	19.267	#####	118044.925	0.084	
100 ppb	19.250	#####	143130.180	0.101	
Average	19.292				
Rel. Std. Dev.	0.288 %				



Injection Name	Ret. Time min Emission 1	Area counts*min Emission 1	Height counts Emission 1	Amount mg/L Emission 1	
	2 NS	2 NS	2 NS	2 NS	
100 ppb	23.217	#####	558884.049	0.100	
20 ppb	23.350	#####	107314.000	0.017	
50 ppb	23.333	#####	285908.188	0.049	
10 ppb	23.883	#####	0.000	0.008	
80 ppb	23.267	#####	451551.273	0.080	
100 ppb	23.250	#####	559042.202	0.101	
Average	23.383				
Rel. Std. Dev.	1.070 %				



Injection Name	Ret. Time min Emission 1	Area counts*min Emission 1	Height counts Emission 1	Amount mg/L Emission 1	
	1,3,5 NTS	1,3,5 NTS	1,3,5 NTS	1,3,5 NTS	
100 ppb	29.967	#####	134006.911	0.101	
20 ppb	29.800	4463.3000	0.000	0.010	
50 ppb	30.017	#####	54763.610	0.045	
10 ppb	29.900	4414.6296	11583.636	0.010	
80 ppb	30.067	#####	97079.491	0.077	
100 ppb	30.083	#####	130042.385	0.103	
Average	29.972				
Rel. Std. Dev.	0.360 %				



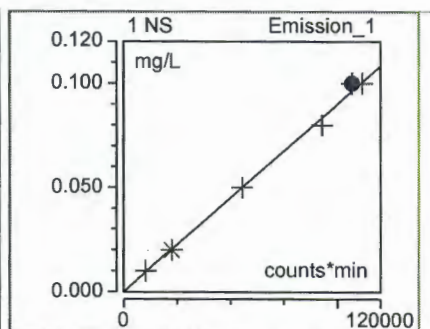
Injection Name	Ret.Time min Emission 1	Area counts*min Emission 1	Height counts Emission 1	Amount mg/L Emission 1	
100 ppb	27.883	#####	133776.581	0.099	
20 ppb	27.917	7801.1583	25638.342	0.021	
50 ppb	27.933	#####	66290.093	0.054	
10 ppb	27.950	3643.3417	12789.000	0.010	
80 ppb	27.967	#####	103249.571	0.080	
100 ppb	27.967	#####	124322.400	0.099	
Average	27.936				
Rel. Std. Dev.	0.116 %				

Injection Name	Ret.Time min Emission 1	Area counts*min Emission 1	Height counts Emission 1	Amount mg/L Emission 1	
100 ppb	8.167	#####	284054.242	0.102	
20 ppb	8.183	#####	57470.258	0.019	
50 ppb	8.233	#####	141880.952	0.049	
10 ppb	8.217	8743.7750	28340.531	0.009	
80 ppb	8.250	#####	224719.410	0.080	
100 ppb	8.250	#####	276353.410	0.099	
Average	8.217				
Rel. Std. Dev.	0.425 %				

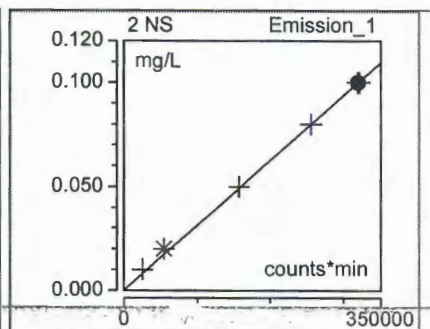
Injection Name	Ret.Time min Emission 1	Area counts*min Emission 1	Height counts Emission 1	Amount mg/L Emission 1	
100 ppb	11.467	#####	474564.689	0.101	
20 ppb	11.517	#####	94732.056	0.019	
50 ppb	11.583	#####	235607.987	0.050	
10 ppb	11.567	#####	46349.714	0.010	
80 ppb	11.567	#####	373161.250	0.080	
100 ppb	11.567	#####	460667.078	0.099	
Average	11.544				
Rel. Std. Dev.	0.384 %				

Injection Name	Ret.Time min Emission 1	Area counts*min Emission 1	Height counts Emission 1	Amount mg/L Emission 1	
100 ppb	12.617	#####	275853.251	0.102	
20 ppb	12.700	#####	53244.458	0.018	
50 ppb	12.750	#####	135458.745	0.049	
10 ppb	12.750	#####	26419.000	0.009	
80 ppb	12.733	#####	212679.875	0.079	
100 ppb	12.733	#####	263014.022	0.099	
Average	12.714				
Rel. Std. Dev.	0.401 %				

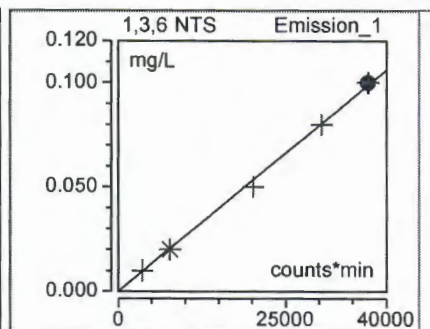
Injection Name	Ret. Time min	Area counts*min	Height counts	Amount mg/L
	Emission 1	Emission 1	Emission 1	Emission 1
100 ppb	1 NS	1 NS	1 NS	1 NS
100 ppb	19.217	#####	138535.256	0.096
20 ppb	19.317	#####	31148.140	0.020
50 ppb	19.350	#####	73695.743	0.050
10 ppb	19.350	#####	15084.655	0.009
80 ppb	19.267	#####	118044.925	0.084
100 ppb	19.250	#####	143130.180	0.101
Average	19.292			
Rel. Std. Dev.	0.288 %			



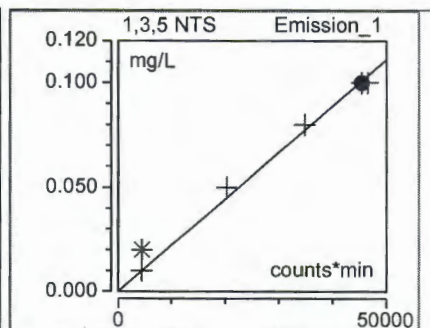
Injection Name	Ret. Time min	Area counts*min	Height counts	Amount mg/L
	Emission 1	Emission 1	Emission 1	Emission 1
100 ppb	2 NS	2 NS	2 NS	2 NS
100 ppb	23.217	#####	558884.049	0.100
20 ppb	23.350	#####	107314.000	0.017
50 ppb	23.333	#####	285908.188	0.049
10 ppb	23.883	#####	0.000	0.008
80 ppb	23.267	#####	451551.273	0.080
100 ppb	23.250	#####	559042.202	0.101
Average	23.383			
Rel. Std. Dev.	1.070 %			



Injection Name	Ret. Time min	Area counts*min	Height counts	Amount mg/L
	Emission 1	Emission 1	Emission 1	Emission 1
100 ppb	1,3,6 NTS	1,3,6 NTS	1,3,6 NTS	1,3,6 NTS
100 ppb	27.883	#####	133776.581	0.099
20 ppb	27.917	7801.1583	25638.342	0.021
50 ppb	27.933	#####	66290.093	0.054
10 ppb	27.950	3643.3417	12789.000	0.010
80 ppb	27.967	#####	103249.571	0.080
100 ppb	27.967	#####	124322.400	0.099
Average	27.936			
Rel. Std. Dev.	0.116 %			



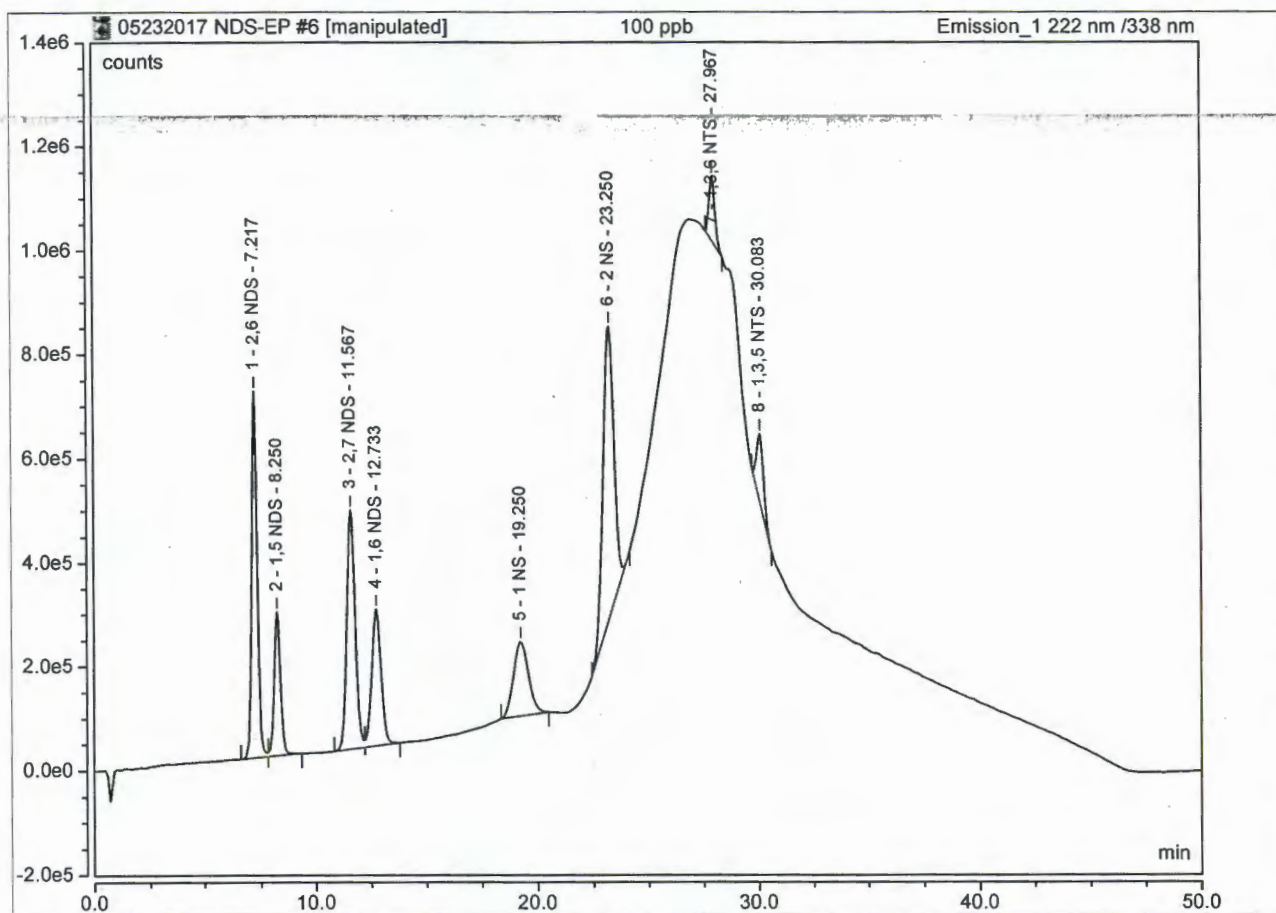
Injection Name	Ret. Time min	Area counts*min	Height counts	Amount mg/L
	Emission 1	Emission 1	Emission 1	Emission 1
100 ppb	1,3,5 NTS	1,3,5 NTS	1,3,5 NTS	1,3,5 NTS
100 ppb	29.967	#####	134006.911	0.101
20 ppb	29.800	4463.3000	0.000	0.010
50 ppb	30.017	#####	54763.610	0.045
10 ppb	29.900	4414.6296	11583.636	0.010
80 ppb	30.067	#####	97079.491	0.077
100 ppb	30.083	#####	130042.385	0.103
Average	29.972			
Rel. Std. Dev.	0.360 %			



Peak Integration Report

Sample Name:	100 ppb	Inj. Vol.:	50.00
Injection Type:	Calibration Standard	Dilution Factor:	1.0000
Program:	NDS 2016 RAMP - Right pump	Operator:	Los Alamos National
Inj. Date / Time:	23-May-2017 / 13:17	Run Time:	50.02

No.	Time min	Peak Name	Peak Type	Area counts*min	Height counts	Amount mg/L
1	7.22	2,6 NDS	BM *	209655.866	705045.916	0.0988
2	8.25	1,5 NDS	MB*	92523.917	276353.410	0.0988
3	11.57	2,7 NDS	BM *	206651.805	460667.078	0.0993
4	12.73	1,6 NDS	MB*	131095.954	263014.022	0.0994
5	19.25	1 NS	BMB*	111613.108	143130.180	0.1006
6	23.25	2 NS	BMB*	321771.508	559042.202	0.1007
7	27.97	1,3,6 NTS	BMB*	37369.867	124322.400	0.0990
8	30.08	1,3,5 NTS	BMB*	46586.950	130042.385	0.1034
TOTAL:				1157268.98	2661617.59	0.80



[illegible]

Nitrate calibrated data

Date analyzed:
Operator:
Isoprime data file:

7/20/2017
George Perkins
Nitrate Bugs 7/20/2017

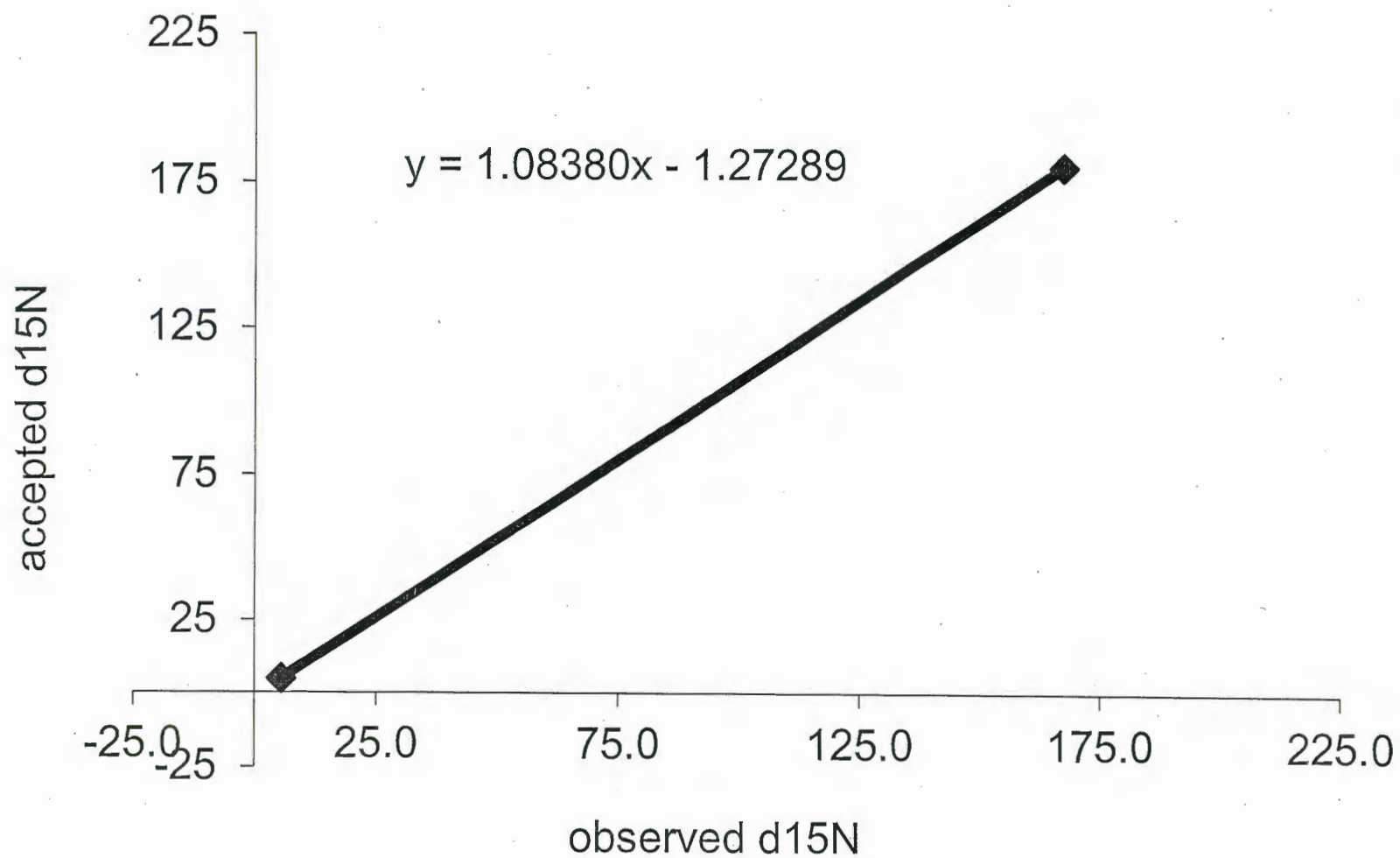
Generation of calibration		$\delta^{15}\text{N}$ Value		$\delta^{18}\text{O}$	$\delta^{18}\text{O}$	$\delta^{17}\text{O}$
		actual	obs	actual	measured	actual
KNO ₃	USGS35	2.7		57.5		51.5
KNO ₃	USGS32	180.0	167.26	25.7		
KNO ₃	IAEA-NO3	4.7	5.51	25.6	20.90	
KNO ₃	USGS34	-1.8		-27.9	-27.44	15.37
		slope				b-int.
		$\delta^{18}\text{O} = 1.1069$				2.47
		$\delta^{15}\text{N} = 1.0838$				-1.27
N-linearity		0.0000				
O-linearity		0.0000				

Sample #	Sample Name	RT	Pk Ht	Raw d15N	Raw d18O	Corr d15N	Corr d18O	corr. d15N	corr. d18O	Comment
Sample Number	Name	RT (Sec)	Height (nA)	15N	18O	#VALUE!	#VALUE!	#VALUE!	#VALUE!	
6	air-1 7-20-17.raw	243.8	0.13	30.46	52.94	31.74	61.07	31.74	61.07	
7	IAEA-NO3-1 7-20-2017.raw	244.9	9.28	5.41	21.16	4.60	25.89	4.60	25.89	
8	IAEA-NO3-2 7-20-2017.raw	247.3	8.75	5.65	20.53	4.85	25.20	4.85	25.20	
9	USGS32-1 7-20-2017.raw	241.7	9.23	167.26	21.39	180.00	26.15	180.00	26.15	
10	USGS34-1 7-20-2017.raw	242.7	8.71	-1.47	-27.44	-2.86	-27.90	-2.86	-27.90	
11	CrCH2-17-129564 7-20-2017.raw	242.6	7.66	15.25	-0.54	15.26	1.87	15.26	1.87	
12	CAWA-17-132587 7-20-2017.raw	241.4	8.94	6.01	-3.10	5.25	-0.96	5.25	-0.96	
13	CAMO-17-132211 7-20-2017.raw	239.8	8.10	5.78	-3.96	4.99	-1.92	4.99	-1.92	
14	CAMO-17-132212 7-20-2017.raw	243.5	8.17	6.52	-4.16	5.79	-2.13	5.79	-2.13	
15	CAMO-17-132523 7-20-2017.raw	246.8	7.80	2.65	-4.45	1.60	-2.46	1.60	-2.46	
16	CrIN6-17-142163 7-20-2017.raw	242.0	8.00	9.37	-2.45	8.88	-0.24	8.88	-0.24	
17	IAEA-NO3-3 7-20-2017.raw	241.5	8.75	5.39	21.05	4.57	25.77	4.57	25.77	
18	Blank 7-20-2017.raw	243.3	0.06	57.39	109.28	60.93	123.43	60.93	123.43	
19	CrCH2-17-129567 7-20-2017.raw	254.7	6.68	15.59	0.84	15.62	3.40	15.62	3.40	
20	CrCH2-17-129560 7-20-2017.raw	245.5	7.10	15.90	-0.24	15.96	2.21	15.96	2.21	
21	CrCH2-17-129561 7-20-2017.raw	243.3	7.29	16.27	0.23	16.36	2.72	16.36	2.72	

22	CrCH2-17-129562 7-20-2017.raw	243.9	8.31
23	CrCH2-17-129563 7-20-2017.raw	245.0	7.82
24	IAEA-NO3-4 1 7-20-2017.raw	244.9	10.05
25	CrCH2-17-128860 7-20-2017.raw	243.4	7.99
26	CrCH2-17-128861 7-20-2017.raw	244.6	7.78
27	CrCH2-17-129558 7-20-2017.raw	243.9	8.66
28	CrEx-1-2-6-17 7-20-2017.raw	247.2	6.70
29	CrCH2-17-129559 7-20-2017.raw	241.9	4.94
30	SCS-2-4-21-15-N-O-Iso 7-20-2017.raw	238.1	0.17
31	Malink-2 7-20-2017.raw	204.1	0.02
32	IAEA-NO3-5 7-20-2017.raw	202.0	0.01
33	USGS32-2 7-20-2017.raw	199.2	0.00

15.64	0.37	15.68	2.88	15.68	2.88
15.37	0.73	15.38	3.28	15.38	3.28
5.60	20.84	4.79	25.54	4.79	25.54
15.74	0.34	15.79	2.84	15.79	2.84
15.43	-0.17	15.45	2.28	15.45	2.28
16.30	0.25	16.40	2.74	16.40	2.74
8.36	-3.78	7.79	-1.72	7.79	-1.72
7.40	-1.31	6.74	1.02	6.74	1.02
16.30	38.68	16.40	45.29	16.40	45.29
521.84	997.27	564.30	1106.35	564.30	1106.35
537.77	1006.90	581.57	1117.01	581.57	1117.01
544.32	1047.56	588.66	1162.01	588.66	1162.01
		1.27	2.47	1.27	2.47
		4.70	25.60	4.70	25.60

d15N calibration



d18O Calibration

