

ALPHA ANALYTICAL LABORATORIES

Eight Walkup Drive  
Westborough, Massachusetts 01581-1019  
(508) 898-9220 www.alphalab.com

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

CERTIFICATE OF ANALYSIS

Client: ERM-New England Laboratory Job Number: L0408093  
Address: 399 Boylston Street  
6th Floor  
Boston, MA 02116 Date Received: 23-JUL-2004  
Attn: Jeremy Picard Date Reported: 30-JUL-2004  
Project Number: 13606.03 Delivery Method: Alpha  
Site: RAYTHEON

---

The following questions pertain only to MCP Analytical Methods

An affirmative response to questions A,B,C & D is required for "Presumptive Certainty" status

- A. Were all samples received by the laboratory in a condition consistent with those described on their Chain-of-Custody documentation for the data set? YES
- B. Were all QA/QC procedures required for the specified analytical method(s) included in this report followed, including the requirement to note and discuss in a narrative QC data that did not meet appropriate performance standards or guidelines? YES
- C. Does the analytical data included in this report meet all the requirements for "Presumptive Certainty", as described in section 2.0 of the MADEP document CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"? YES
- D. **VPH and EPH methods only:** Was the VPH or EPH method run without significant modifications, as specified in Section 11.3? NA

A response to questions E and F is required for "Presumptive Certainty" status

- E. Were all QC performance standards and recommendations for the specified method(s) achieved? NO
- F. Were results for all analyte-list compounds/elements for the specified method(s) reported? NO

Any answers of NO to the above questions are addressed in the case narrative.

---

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

---

Authorized by: James Todaro  
This document electronically signed

ALPHA ANALYTICAL LABORATORIES

Laboratory Job Number: L0408093

Date Reported: 30-JUL-2004

---

ALPHA SAMPLE NUMBER	CLIENT IDENTIFICATION	SAMPLE LOCATION
L0408093-01	MW-208M	WAYLAND, MA
L0408093-02	FD-01	WAYLAND, MA
L0408093-03	MW-208D	WAYLAND, MA
L0408093-04	MW-202D	WAYLAND, MA

ALPHA ANALYTICAL LABORATORIES  
NARRATIVE REPORT

Laboratory Job Number: L0408093

---

Report Submission

In reference to question F, at the client's request, the samples were analyzed only for the compounds specified on the chain of custody.

Volatile Organics

In reference to question E, the Surrogate % Recovery for 4-bromofluorobenzene on -04 is above the acceptance criteria for the method.

An MSD could not be analyzed due to the lack of sample volume remaining after instrumentation errors and lost analytical runs.

**ALPHA ANALYTICAL LABORATORIES  
CERTIFICATE OF ANALYSIS**

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0408093-01		Date Collected: 23-JUL-2004 09:35
	MW-208M	Date Received : 23-JUL-2004
Sample Matrix: WATER		Date Reported : 30-JUL-2004
Condition of Sample: Satisfactory		Field Prep: None
Number & Type of Containers: 2-Vial		

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP    ANAL	ID
Volatile Organics by MCP 8260B				60 8260B	0728 19:12	RY
Methylene chloride	ND	ug/l	5.0			
1,1-Dichloroethane	1.5	ug/l	0.75			
Chloroform	ND	ug/l	0.75			
Carbon tetrachloride	ND	ug/l	0.50			
1,2-Dichloropropane	ND	ug/l	1.8			
Dibromochloromethane	ND	ug/l	0.50			
1,1,2-Trichloroethane	ND	ug/l	0.75			
Tetrachloroethene	ND	ug/l	0.50			
Chlorobenzene	ND	ug/l	0.50			
1,2-Dichloroethane	ND	ug/l	0.50			
1,1,1-Trichloroethane	ND	ug/l	0.50			
Bromodichloromethane	ND	ug/l	0.50			
trans-1,3-Dichloropropene	ND	ug/l	0.50			
cis-1,3-Dichloropropene	ND	ug/l	0.50			
Bromoform	ND	ug/l	2.0			
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50			
Benzene	ND	ug/l	0.50			
Chloromethane	ND	ug/l	2.5			
Vinyl chloride	ND	ug/l	1.0			
Chloroethane	ND	ug/l	1.0			
1,1-Dichloroethene	0.56	ug/l	0.50			
trans-1,2-Dichloroethene	ND	ug/l	0.75			
Trichloroethene	7.4	ug/l	0.50			
1,2-Dichlorobenzene	ND	ug/l	2.5			
1,3-Dichlorobenzene	ND	ug/l	2.5			
1,4-Dichlorobenzene	ND	ug/l	2.5			
Methyl tert butyl ether	8.3	ug/l	1.0			
cis-1,2-Dichloroethene	0.81	ug/l	0.50			
Dichlorodifluoromethane	ND	ug/l	5.0			
1,2-Dibromoethane	ND	ug/l	2.0			
1,3-Dichloropropane	ND	ug/l	2.5			
1,1,1,2-Tetrachloroethane	ND	ug/l	0.50			
o-Chlorotoluene	ND	ug/l	2.5			
p-Chlorotoluene	ND	ug/l	2.5			
Hexachlorobutadiene	ND	ug/l	1.0			
1,2,4-Trichlorobenzene	ND	ug/l	2.5			

Comments: Complete list of References and Glossary of Terms found in Addendum I

**ALPHA ANALYTICAL LABORATORIES  
CERTIFICATE OF ANALYSIS**

Laboratory Sample Number: L0408093-01  
MW-208M

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Volatile Organics by MCP 8260B continued				60 8260B	0728 19:12 RY		
Surrogate(s)	Recovery			QC Criteria			
1,2-Dichloroethane-d4	105.	%		70-130			
Toluene-d8	101.	%		70-130			
4-Bromofluorobenzene	120.	%		70-130			
Dibromofluoromethane	103.	%		70-130			

Comments: Complete list of References and Glossary of Terms found in Addendum I



ALPHA ANALYTICAL LABORATORIES  
 CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0408093-02  
 FD-01

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Volatile Organics by MCP 8260B continued				60 8260B	0728 19:49 RY		
Surrogate(s)	Recovery			QC Criteria			
1,2-Dichloroethane-d4	106.	%		70-130			
Toluene-d8	100.	%		70-130			
4-Bromofluorobenzene	123.	%		70-130			
Dibromofluoromethane	102.	%		70-130			

Comments: Complete list of References and Glossary of Terms found in Addendum I

**ALPHA ANALYTICAL LABORATORIES  
CERTIFICATE OF ANALYSIS**

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0408093-03		Date Collected: 23-JUL-2004 11:00
	MW-208D	Date Received : 23-JUL-2004
Sample Matrix: WATER		Date Reported : 30-JUL-2004
Condition of Sample: Satisfactory		Field Prep: None
Number & Type of Containers: 6-Vial		

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP ANAL	ID
Volatile Organics by MCP 8260B				60 8260B	0728 20:26 RY	
Methylene chloride	ND	ug/l	5.0			
1,1-Dichloroethane	ND	ug/l	0.75			
Chloroform	ND	ug/l	0.75			
Carbon tetrachloride	ND	ug/l	0.50			
1,2-Dichloropropane	ND	ug/l	1.8			
Dibromochloromethane	ND	ug/l	0.50			
1,1,2-Trichloroethane	ND	ug/l	0.75			
Tetrachloroethene	ND	ug/l	0.50			
Chlorobenzene	ND	ug/l	0.50			
1,2-Dichloroethane	ND	ug/l	0.50			
1,1,1-Trichloroethane	ND	ug/l	0.50			
Bromodichloromethane	ND	ug/l	0.50			
trans-1,3-Dichloropropene	ND	ug/l	0.50			
cis-1,3-Dichloropropene	ND	ug/l	0.50			
Bromoform	ND	ug/l	2.0			
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50			
Benzene	ND	ug/l	0.50			
Chloromethane	ND	ug/l	2.5			
Vinyl chloride	ND	ug/l	1.0			
Chloroethane	ND	ug/l	1.0			
1,1-Dichloroethene	ND	ug/l	0.50			
trans-1,2-Dichloroethene	ND	ug/l	0.75			
Trichloroethene	1.8	ug/l	0.50			
1,2-Dichlorobenzene	ND	ug/l	2.5			
1,3-Dichlorobenzene	ND	ug/l	2.5			
1,4-Dichlorobenzene	ND	ug/l	2.5			
Methyl tert butyl ether	ND	ug/l	1.0			
cis-1,2-Dichloroethene	ND	ug/l	0.50			
Dichlorodifluoromethane	ND	ug/l	5.0			
1,2-Dibromoethane	ND	ug/l	2.0			
1,3-Dichloropropane	ND	ug/l	2.5			
1,1,1,2-Tetrachloroethane	ND	ug/l	0.50			
o-Chlorotoluene	ND	ug/l	2.5			
p-Chlorotoluene	ND	ug/l	2.5			
Hexachlorobutadiene	ND	ug/l	1.0			
1,2,4-Trichlorobenzene	ND	ug/l	2.5			

Comments: Complete list of References and Glossary of Terms found in Addendum I



**ALPHA ANALYTICAL LABORATORIES**  
**CERTIFICATE OF ANALYSIS**

Laboratory Sample Number: L0408093-03  
 MW-208D

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Volatile Organics by MCP 8260B continued				60 8260B	0728 20:26 RY		
Surrogate(s)	Recovery			QC Criteria			
1,2-Dichloroethane-d4	106.	%		70-130			
Toluene-d8	101.	%		70-130			
4-Bromofluorobenzene	125.	%		70-130			
Dibromofluoromethane	102.	%		70-130			

Comments: Complete list of References and Glossary of Terms found in Addendum I



ALPHA ANALYTICAL LABORATORIES  
 CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0408093-04  
 MW-202D

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Volatile Organics by MCP 8260B continued				60 8260B	0728 21:02		RY
Surrogate(s)	Recovery			QC Criteria			
1,2-Dichloroethane-d4	105.	%		70-130			
Toluene-d8	104.	%		70-130			
4-Bromofluorobenzene	133.	%		70-130			
Dibromofluoromethane	103.	%		70-130			

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES  
QUALITY ASSURANCE BATCH SPIKE ANALYSES

Laboratory Job Number: L0408093

Parameter	% Recovery	QC Criteria
Volatile Organics by MCP 8260B SPIKE for sample(s) 01-04 (L0408093-03, WG176973)		
Methylene chloride	101	70-130
1,1-Dichloroethane	110	70-130
Chloroform	108	70-130
Carbon tetrachloride	108	70-130
1,2-Dichloropropane	106	70-130
Dibromochloromethane	98	70-130
1,1,2-Trichloroethane	104	70-130
Tetrachloroethene	115	70-130
Chlorobenzene	109	70-130
1,2-Dichloroethane	104	70-130
1,1,1-Trichloroethane	112	70-130
Bromodichloromethane	108	70-130
trans-1,3-Dichloropropene	103	70-130
cis-1,3-Dichloropropene	105	70-130
Bromoform	110	70-130
1,1,2,2-Tetrachloroethane	101	70-130
Benzene	105	70-130
Chloromethane	92	70-130
Vinyl chloride	90	70-130
Chloroethane	89	70-130
1,1-Dichloroethene	94	70-130
trans-1,2-Dichloroethene	102	70-130
Trichloroethene	107	70-130
1,2-Dichlorobenzene	108	70-130
1,3-Dichlorobenzene	112	70-130
1,4-Dichlorobenzene	108	70-130
Methyl tert butyl ether	94	70-130
cis-1,2-Dichloroethene	111	70-130
Dichlorodifluoromethane	80	70-130
1,2-Dibromoethane	103	70-130
1,3-Dichloropropane	106	70-130
1,1,1,2-Tetrachloroethane	108	70-130
o-Chlorotoluene	112	70-130
p-Chlorotoluene	109	70-130
Hexachlorobutadiene	111	70-130
1,2,4-Trichlorobenzene	109	70-130
Surrogate(s)		
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	100	70-130
Dibromofluoromethane	99	70-130

ALPHA ANALYTICAL LABORATORIES  
QUALITY ASSURANCE BATCH LCS/LCSD ANALYSIS

Laboratory Job Number: L0408093

Parameter	LCS %	LCSD %	RPD	RPD Limit	QC Limits
Volatile Organics by MCP 8260B for sample(s) 01-04 (WG176973-3, WG176973)					
Methylene chloride	90	94	4	25	70-130
1,1-Dichloroethane	91	100	9	25	70-130
Chloroform	96	101	5	25	70-130
Carbon tetrachloride	92	98	6	25	70-130
1,2-Dichloropropane	91	96	5	25	70-130
Dibromochloromethane	88	95	8	25	70-130
1,1,2-Trichloroethane	89	98	10	25	70-130
Tetrachloroethene	91	100	9	25	70-130
Chlorobenzene	90	97	7	25	70-130
1,2-Dichloroethane	94	97	3	25	70-130
1,1,1-Trichloroethane	96	101	5	25	70-130
Bromodichloromethane	95	98	3	25	70-130
trans-1,3-Dichloropropene	86	92	7	25	70-130
cis-1,3-Dichloropropene	93	97	4	25	70-130
Bromoform	98	102	4	50	70-130
1,1,2,2-Tetrachloroethane	90	98	9	25	70-130
Benzene	91	97	6	25	70-130
Chloromethane	76	84	10	50	70-130
Vinyl chloride	78	82	5	25	70-130
Chloroethane	76	87	13	25	70-130
1,1-Dichloroethene	79	84	6	25	70-130
trans-1,2-Dichloroethene	85	92	8	25	70-130
Trichloroethene	90	95	5	25	70-130
1,2-Dichlorobenzene	91	100	9	25	70-130
1,3-Dichlorobenzene	93	104	11	25	70-130
1,4-Dichlorobenzene	90	98	9	25	70-130
Methyl tert butyl ether	93	98	5	25	70-130
cis-1,2-Dichloroethene	92	94	2	25	70-130
Dichlorodifluoromethane	79	93	16	50	70-130
1,2-Dibromoethane	89	96	8	25	70-130
1,3-Dichloropropane	89	94	5	25	70-130
1,1,1,2-Tetrachloroethane	93	96	3	25	70-130
o-Chlorotoluene	92	103	11	25	70-130
p-Chlorotoluene	91	102	11	25	70-130
Hexachlorobutadiene	83	93	11	25	70-130
1,2,4-Trichlorobenzene	92	100	8	25	70-130
Surrogate(s)					
1,2-Dichloroethane-d4	99	102	3		70-130
Toluene-d8	99	100	1		70-130
4-Bromofluorobenzene	101	100	1		70-130
Dibromofluoromethane	100	101	1		70-130

ALPHA ANALYTICAL LABORATORIES  
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0408093

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Blank Analysis for sample(s) 01-04 (WG176973-5)							
Volatile Organics by MCP 8260B				60 8260B	0728 16:06 RY		
Methylene chloride	ND	ug/l	5.0				
1,1-Dichloroethane	ND	ug/l	0.75				
Chloroform	ND	ug/l	0.75				
Carbon tetrachloride	ND	ug/l	0.50				
1,2-Dichloropropane	ND	ug/l	1.8				
Dibromochloromethane	ND	ug/l	0.50				
1,1,2-Trichloroethane	ND	ug/l	0.75				
Tetrachloroethene	ND	ug/l	0.50				
Chlorobenzene	ND	ug/l	0.50				
1,2-Dichloroethane	ND	ug/l	0.50				
1,1,1-Trichloroethane	ND	ug/l	0.50				
Bromodichloromethane	ND	ug/l	0.50				
trans-1,3-Dichloropropene	ND	ug/l	0.50				
cis-1,3-Dichloropropene	ND	ug/l	0.50				
Bromoform	ND	ug/l	2.0				
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50				
Benzene	ND	ug/l	0.50				
Chloromethane	ND	ug/l	2.5				
Vinyl chloride	ND	ug/l	1.0				
Chloroethane	ND	ug/l	1.0				
1,1-Dichloroethene	ND	ug/l	0.50				
trans-1,2-Dichloroethene	ND	ug/l	0.75				
Trichloroethene	ND	ug/l	0.50				
1,2-Dichlorobenzene	ND	ug/l	2.5				
1,3-Dichlorobenzene	ND	ug/l	2.5				
1,4-Dichlorobenzene	ND	ug/l	2.5				
Methyl tert butyl ether	ND	ug/l	1.0				
cis-1,2-Dichloroethene	ND	ug/l	0.50				
Dichlorodifluoromethane	ND	ug/l	5.0				
1,2-Dibromoethane	ND	ug/l	2.0				
1,3-Dichloropropane	ND	ug/l	2.5				
1,1,1,2-Tetrachloroethane	ND	ug/l	0.50				
o-Chlorotoluene	ND	ug/l	2.5				
p-Chlorotoluene	ND	ug/l	2.5				
Hexachlorobutadiene	ND	ug/l	1.0				
1,2,4-Trichlorobenzene	ND	ug/l	2.5				
Surrogate(s)	Recovery		QC Criteria				
1,2-Dichloroethane-d4	98.0	%	70-130				
Toluene-d8	100.	%	70-130				
4-Bromofluorobenzene	120.	%	70-130				
Dibromofluoromethane	98.0	%	70-130				

**ALPHA ANALYTICAL LABORATORIES  
ADDENDUM I**

---

**REFERENCES**

60. Quality Assurance and Quality Control Requirements and Performance Standards for SW-846 Methods. MADEP BWSC. WSC-CAM-IIA (Revision 4), WSC-CAM-V C (Revision 2), WSC-CAM-IIIA (Revision 5). May 2004.

**GLOSSARY OF TERMS AND SYMBOLS**

REF Reference number in which test method may be found.  
METHOD Method number by which analysis was performed.  
ID Initials of the analyst.  
ND Not detected in comparison to the reported detection limit.

Please note that all solid samples are reported on dry weight basis unless noted otherwise.

**LIMITATION OF LIABILITIES**

Alpha Analytical, Inc. performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical, Inc., shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical, Inc. be held liable for any incidental consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical, Inc.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding times and splitting of samples in the field.

**ALPHA ANALYTICAL LABORATORIES  
LOGIN SPECIFIC INFORMATION**

Laboratory Job Number: L0408093

---

Were project specific reporting limits specified? NO

**Cooler Information**

Cooler	Custody Seal
A	Absent

---

**Container Information**

Container ID	Container Type	Cooler	pH	Temp	Pres	Seal	Analysis
L0408093-01A	Vial HCl preserved	A	N/A	1.6C	Y	Absent	MCP-8260-04
L0408093-01B	Vial HCl preserved	A	N/A	1.6C	Y	Absent	MCP-8260-04
L0408093-02A	Vial HCl preserved	A	N/A	1.6C	Y	Absent	MCP-8260-04
L0408093-02B	Vial HCl preserved	A	N/A	1.6C	Y	Absent	MCP-8260-04
L0408093-03A	Vial HCl preserved	A	N/A	1.6C	Y	Absent	MCP-8260-04
L0408093-03B	Vial HCl preserved	A	N/A	1.6C	Y	Absent	MCP-8260-04
L0408093-03C	Vial HCl preserved	A	N/A	1.6C	Y	Absent	MCP-8260-04
L0408093-03D	Vial HCl preserved	A	N/A	1.6C	Y	Absent	MCP-8260-04
L0408093-03E	Vial HCl preserved	A	N/A	1.6C	Y	Absent	MCP-8260-04
L0408093-03F	Vial HCl preserved	A	N/A	1.6C	Y	Absent	MCP-8260-04
L0408093-04A	Vial HCl preserved	A	N/A	1.6C	Y	Absent	MCP-8260-04
L0408093-04B	Vial HCl preserved	A	N/A	1.6C	Y	Absent	MCP-8260-04

**Container Comments**

Container ID	Comments
--------------	----------

---





# CHAIN OF CUSTODY

PAGE 1 OF 1

Eight Walkup Drive Westborough, MA 01581  
TEL: 508-898-9220 FAX: 508-898-9193

### Client Information

Client: ERM

Address: 399 Baylston St  
Boston MA 02116

Phone: 617 646 7800

Fax: 617 267 6447

Email:

### Project Information

Project Name: Kathana

Project Location: Walden

Project #: 1366-03

Project Manager: Picard

ALPHA Quote #:

Turn-Around Time

Standard  RUSH (only confirmed if pre-approved)

Date Due: 7-30-04 Time:

Other Project Specific Requirements/Comments/Detection Limits:

Date Rec'd in Lab: 7-23-04

ALPHA Job #: 10408093

### Report Information - Data Deliverables

FAX  EMAIL

ADDEX  Add'l Deliverables

### Billing Information

Same as Client Info

PO #:

### Regulatory Requirements/Report Limits

State / Fed Program

Criteria

### MCP PRESUMPTIVE CERTAINTY - THESE QUESTIONS MUST BE ANSWERED

Yes  No Are MCP Analytical Methods Required?  
 Yes  No Are Drinking Water Samples Submitted?  
 Yes  No Have you met minimum field QC requirements?

### SAMPLE HANDLING

Filtration  Done  Not needed  
Lab to do  Preservation  Lab to do  
(Please specify below)

ANALYSIS  
CHLORIDE, NITRATE, AMMONIA

### Sample Specific Comments

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials	Date	Time	Container Type	Preservative	Date/Time	Received By	Date/Time	Sample Specific Comments
		Date	Time										
8093	MW-2084	7/23/04	935	GW	MC 2			B		7/23/04 1715	See reverse side	7-23-04 1815	
	FD-01	7/23/04	2400	GW	MC 2			B					
	MW-2080	7/23/04	1100	GW	MC 2			B					
	MSMW-2080	7/23/04	1100	GW	MC 2			B					
	MSD MW-2080	7/23/04	1100	GW	MC 2			B					
	MW-2022	7/23/04	1400	GW	MC 2			B					

QUESTIONS ABOVE MUST BE ANSWERED FOR PRESUMPTIVE CERTAINTY

IS YOUR PROJECT MCP ?

Relinquished By:

*[Signature]*

Container Type

Preservative

Date/Time

7/23/04 1715

Received By:

*[Signature]*

Date/Time

7-23-04 1815

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms. See reverse side.

TOTAL # OF SAMPLES

12