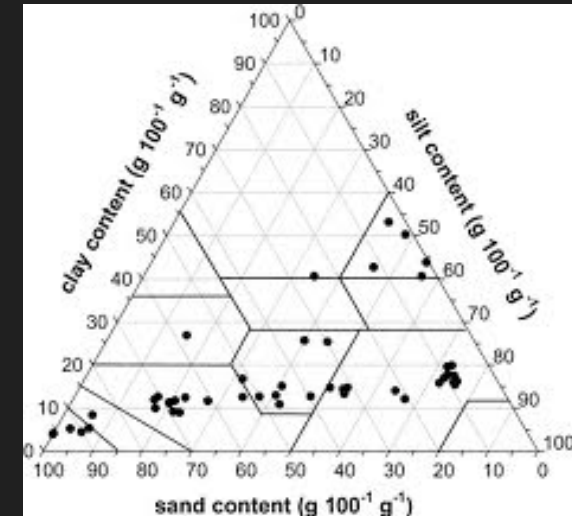


# Soil Storage Effects

Melanie McCauley

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# Why Archive?



## Soils are archived:

- Used in future studies
- Test for differences in methods
- Determine true environmental change

**This strategy is effective if there are minimal storage effects**

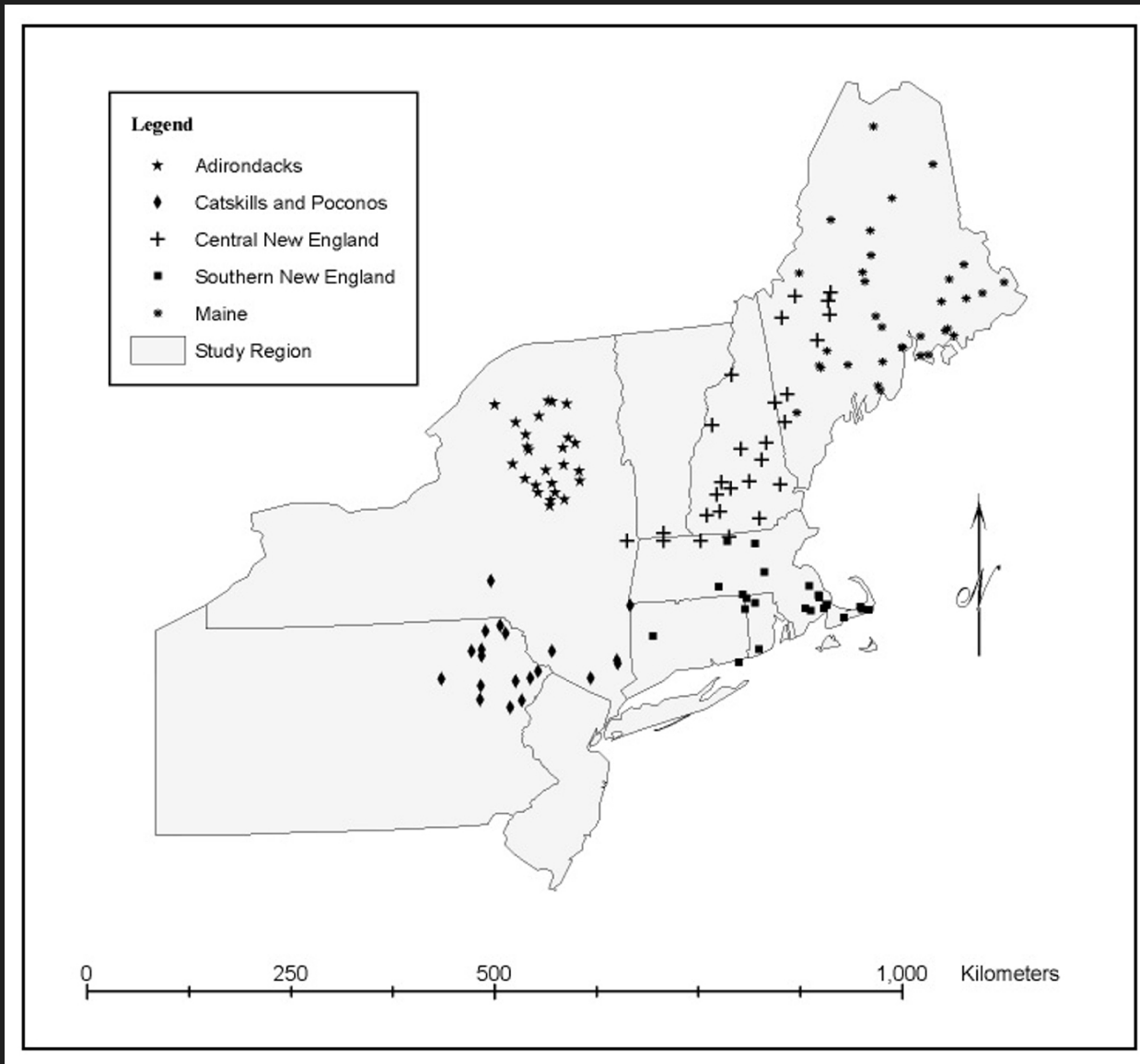
# A Regional Scale Study

## DDRP Watersheds Resurveyed in 2001

768 samples collected

Representing 139 watersheds

Significantly acidified



# A Regional Scale Study

- **Storage Effects**

- pH,
- Exch. Acidity,
- %C,
- %N, and
- Exch. Base Cations



Unknown  
Pond, ADK,  
2001

# Methods (2001 and 2013)

- Soils air-dried and sieved through a 5mm sieve
- Soils stored in the Johnson Laboratory
- Approximately 2.5 g of soil extracted with 1M KCl for 14 hours (MVE)
- Extract (25 mL) titrated with 0.0070 M NaOH
- Used phenolphthalein for endpoint

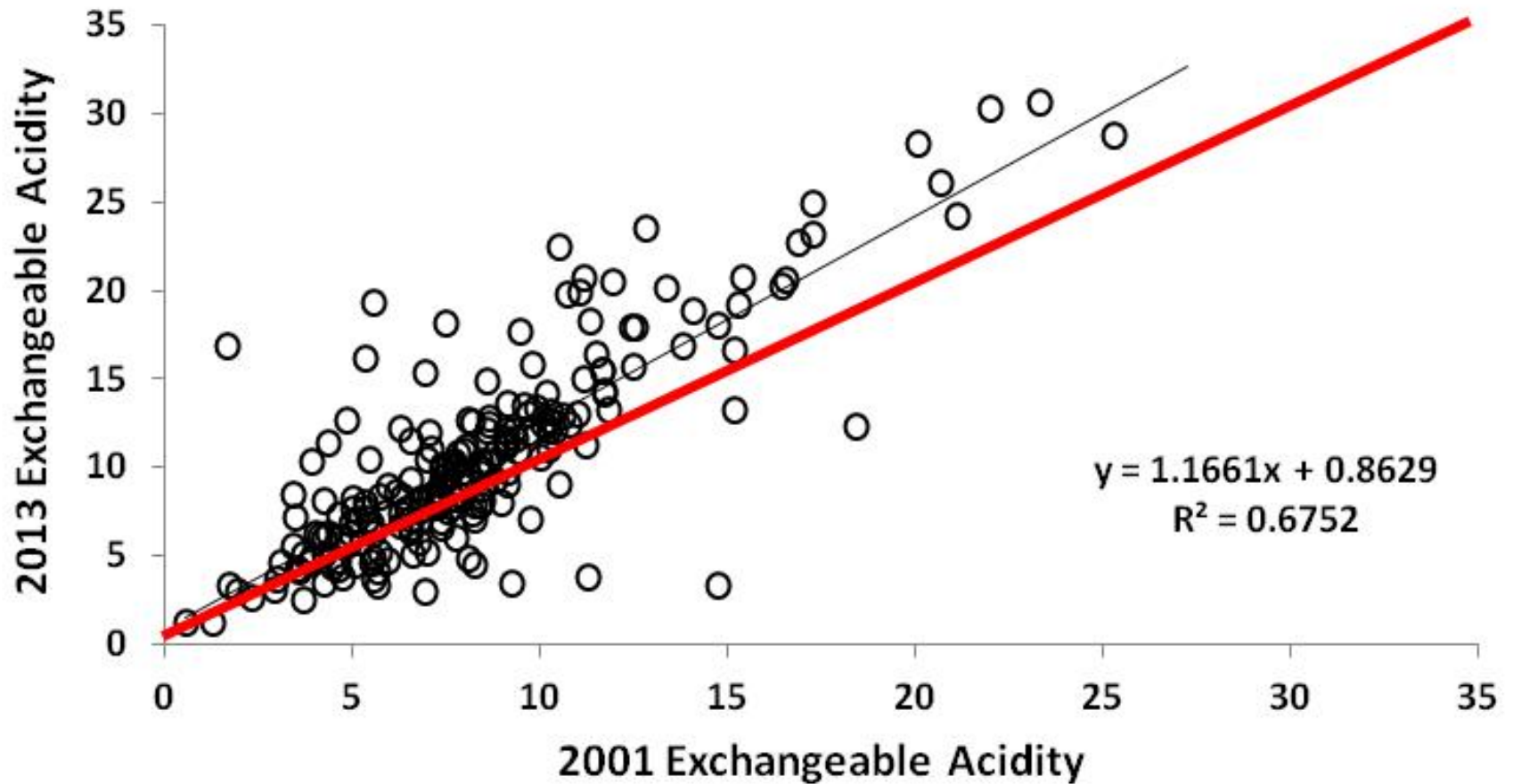
# Results

## Exchangeable Acidity ( $\text{cmol}_c/\text{kg}$ )

	2001	2013
<b>All Soils</b>	8.52	10.53
<b>Oie</b>	7.45	8.91
<b>Oa</b>	10.04	12.85

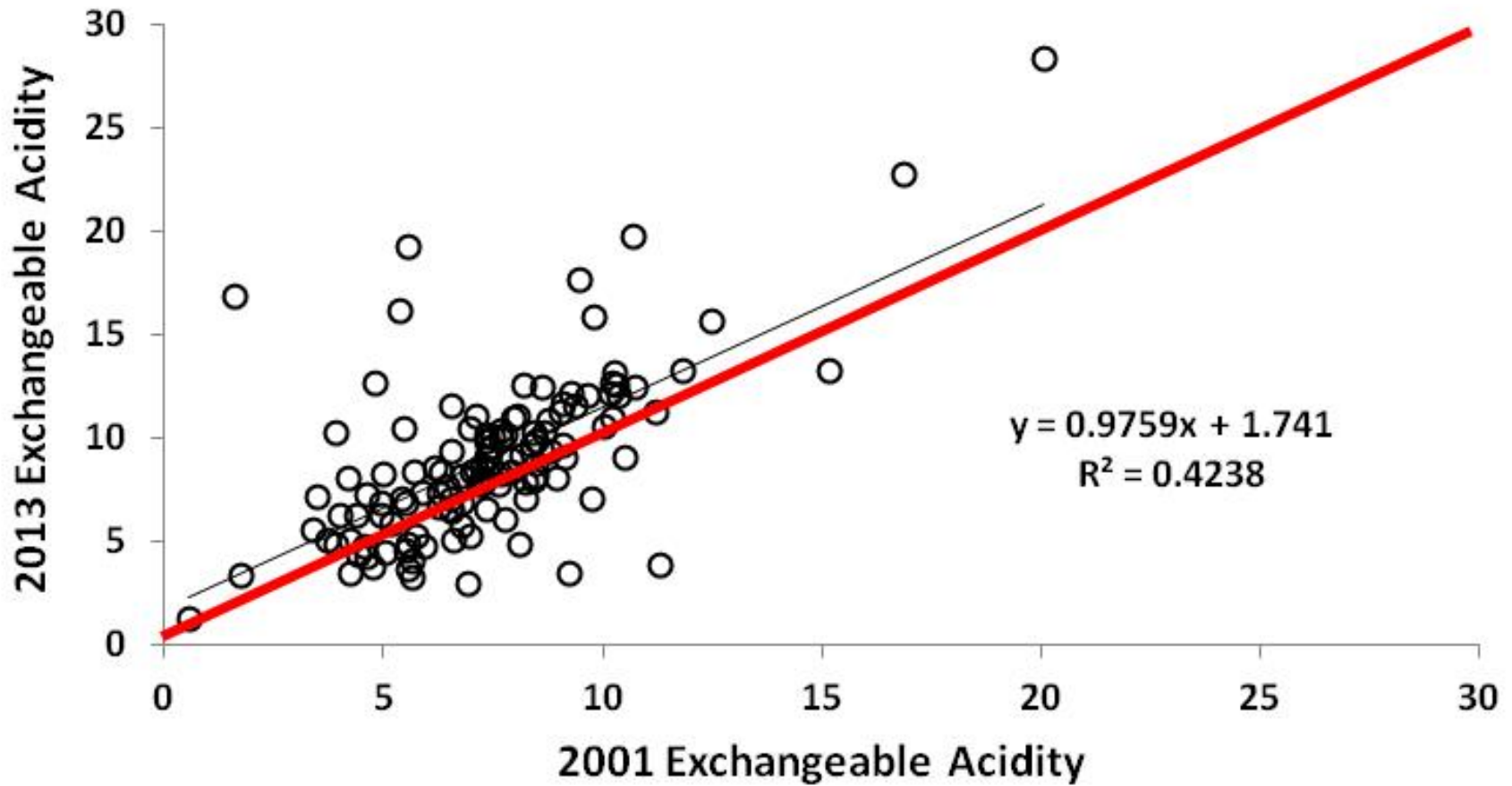
# Oie and Oa

Exchangeable Acidity of all Soils (cmol<sub>c</sub>/kg)



# Oie

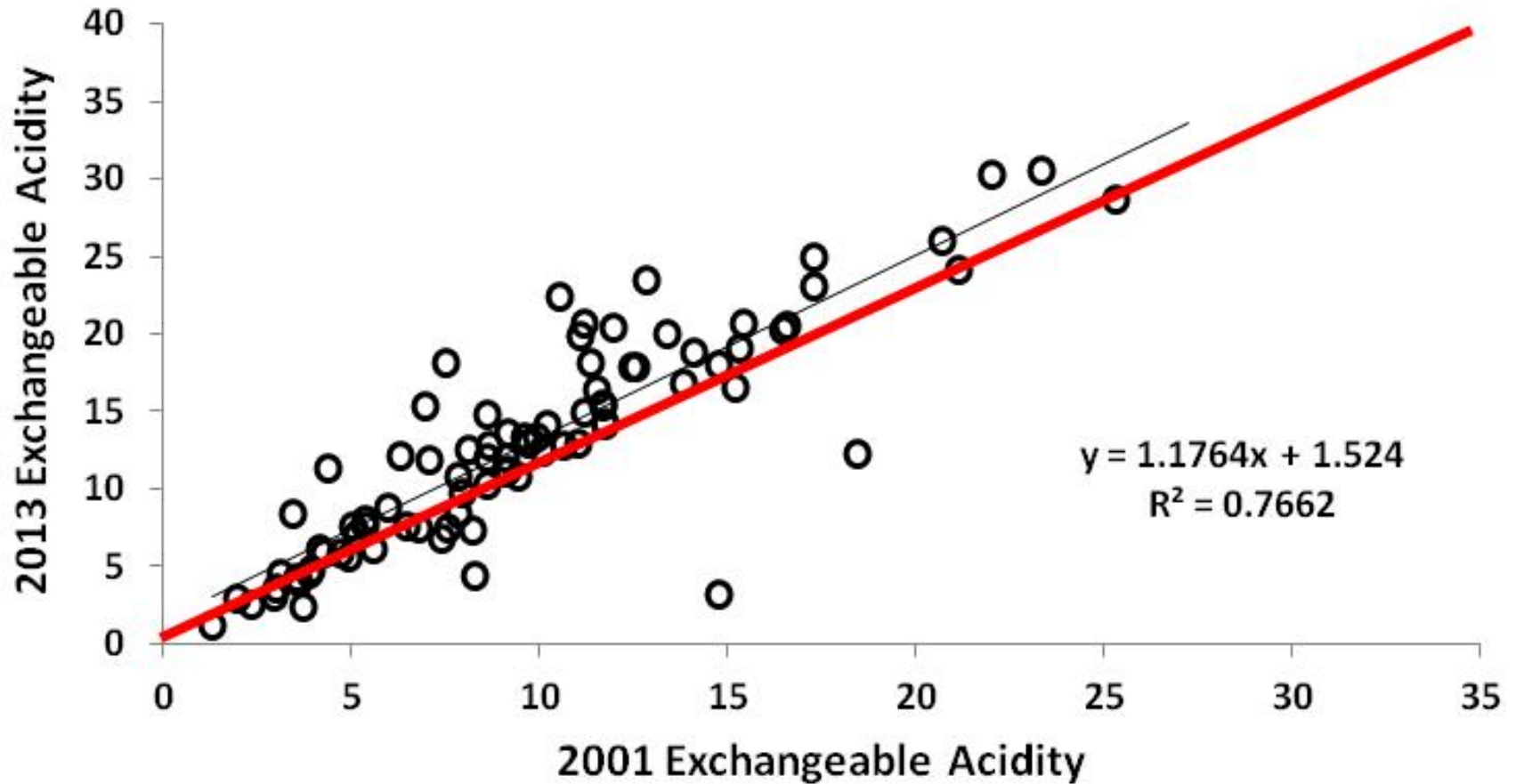
Exchangeable Acidity of all Oie Soils (cmol<sub>c</sub>/kg)





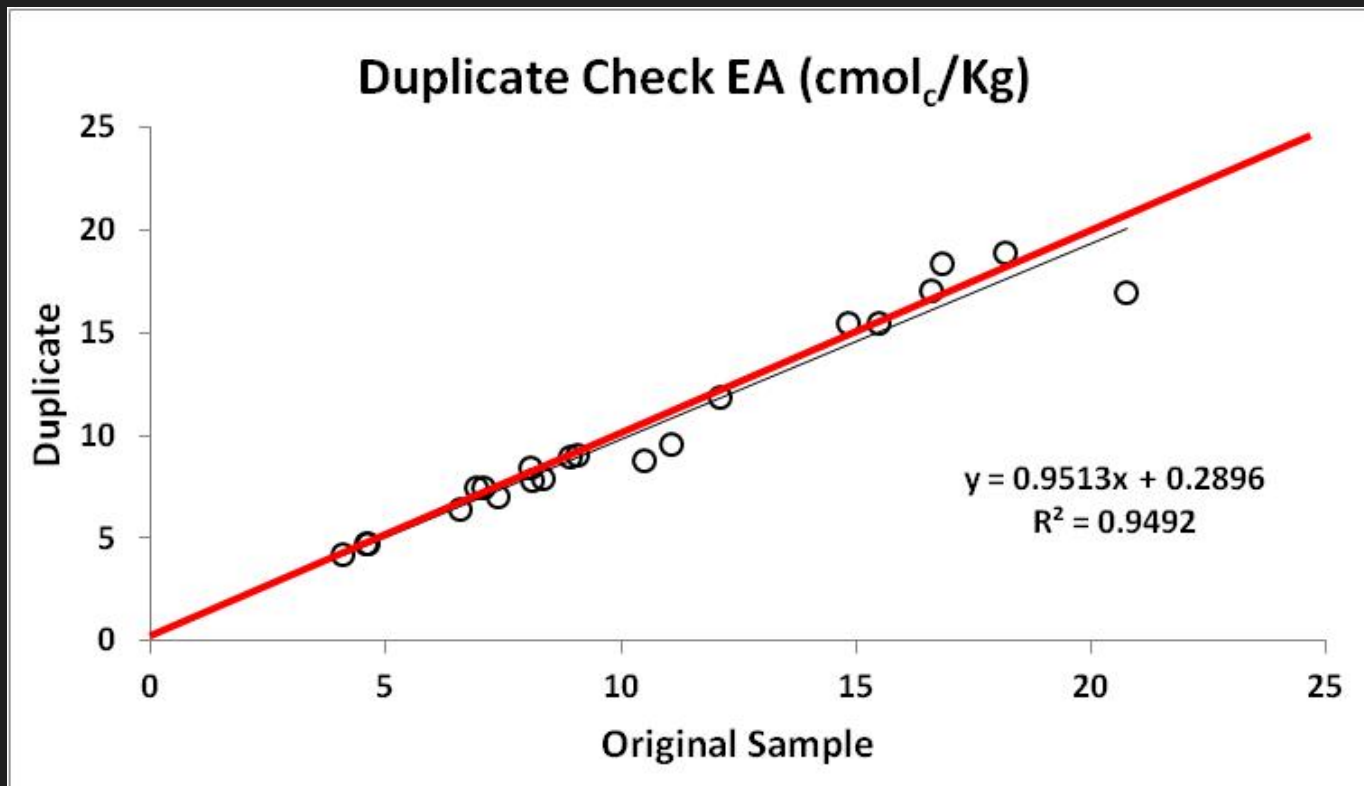
# Oa

## Exchangeable Acidity of all Oa Soils (cmol<sub>c</sub>/kg)



# QAQC

- Soils homogenized
- NaOH standardized every 2 weeks with KHP
- Values blank corrected
- Duplicate samples



# Why?

## Oxidation



# What can we do?

- Freeze Samples
- Store samples under  $N_2$
- Thoughts?



# Questions ?

