

# **COMMON DATA PITFALLS IN FIELD EVALUATION**

**Presented  
By**

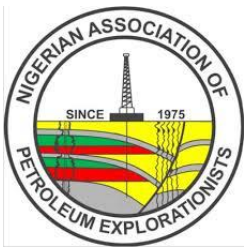
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**DEGECONEK**

**January 16, 2019**

# OUTLINE

- **Introduction**
- **Common Pitfalls**
  - ✓ **Pre-Evaluation**
  - ✓ **Evaluation**
- **Conclusion**



# Introduction

In general, asset evaluations are continuous exercises to ‘look and look again’ with a view to improving the understanding of such assets. This presentation is intended to highlight aspects of evaluations that are often ignored or overlooked

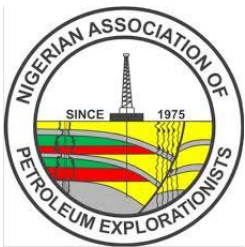
## **– Data Validation**

**Focus of the presentation is on seismic and well data**

Fields discovered pre-1988 are outcomes of 2D seismic evaluations. Such fields in most cases, are subsequently covered by 3D seismic

These 3D seismic data are often acquired to improve the quality of the evaluations over areas where 2D data has been previously used. In most cases, the 2D data are rarely used afterwards, often inconsequential in future evaluations.

However unlike seismic, old wells can neither be re-drilled in exact manner as a replacement nor their data substituted with new ones. At best, new ones are seen as additional data points.

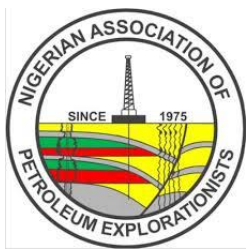


# Introduction

Challenges with the data used for evaluations:-

- Missing – Acquired but misplaced or damaged during archiving
- Misrepresentation – Modified during conversion from analogue to digital
- Erroneous – Wrongly acquired or documented data

Key to correcting these data are to use of available technologies and other evolving tools.



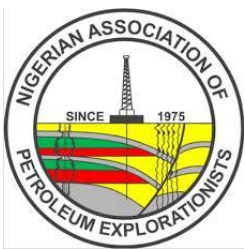
# Types of Data to Validate

## Seismic:

- Positioning
- Cartographic Reference System
- Seismic Datum

## Wells:

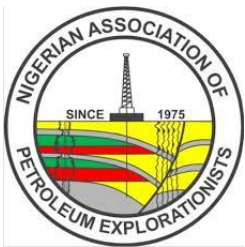
- Coordinates
- Log curves- if digitized
- Deviation
- VSP/ Checkshot
- Production data



# WHAT COULD ACTUALLY GO WRONG?

There are a number of things that could go wrong in,  
Seismic/Well

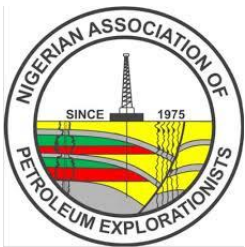
- Acquisition and
  - Processing
- 
- Evaluation team has no control over these pitfalls!!



# What could go wrong with the Data for Evaluation?

## ☐ Seismic/Well

- ✓ Data integrity (completeness, accuracy, reliability, mis-representation)
- ✓ Technological advancement (GPS, Digitization etc.)
- ✓ Human errors

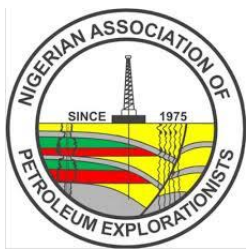


# Data Completeness

The level of completeness of a data can have a large effect on the competency of the output result of any interpretation

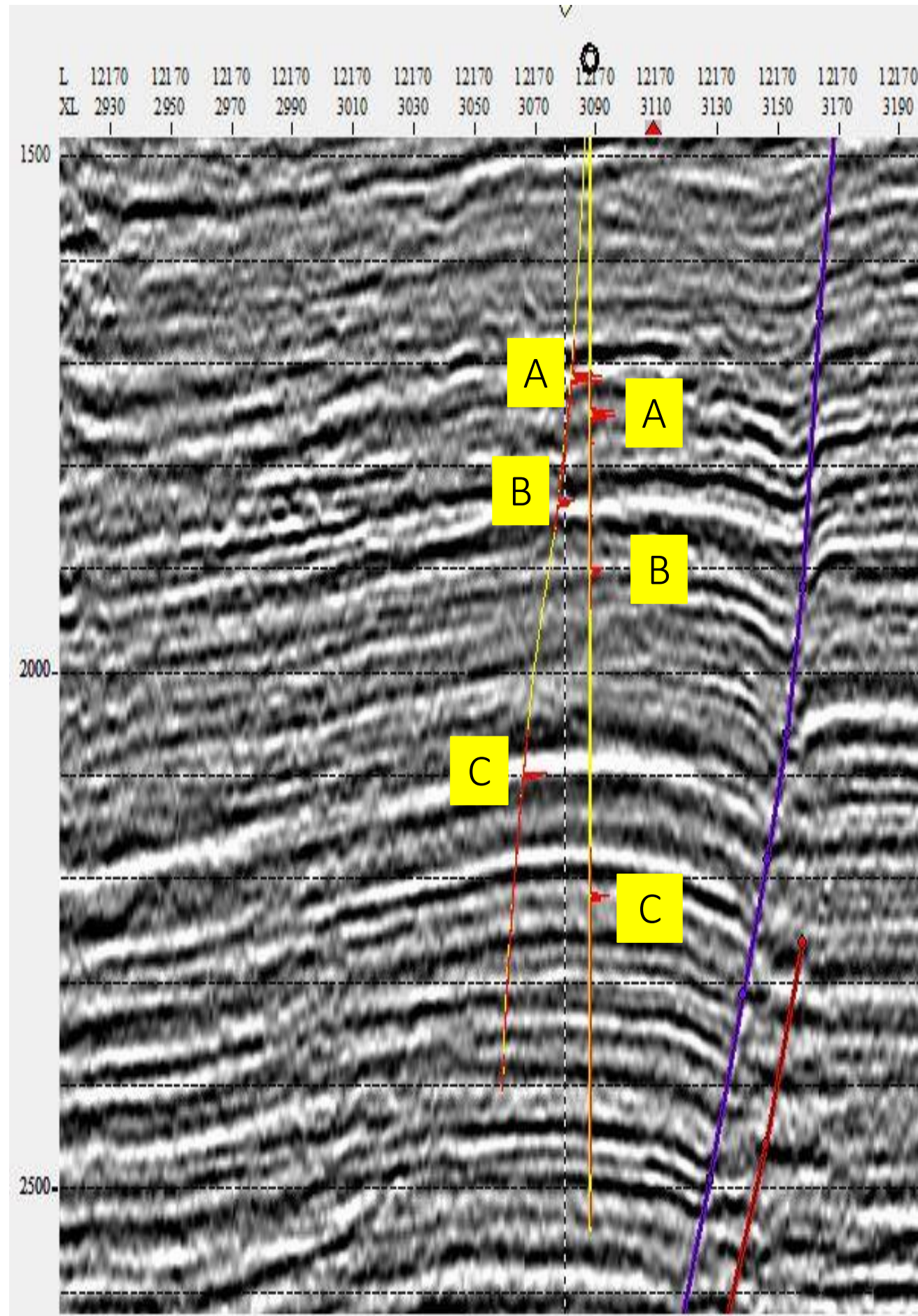
For Example;

The Absence of a crucial data such as a **DEVIATION** data could totally mar the integrity of any evaluation





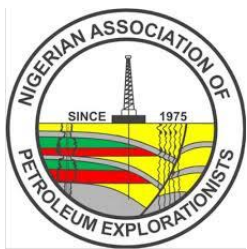
# Example



# Data Accuracy

Data accuracy is very crucial, as inaccurate data will definitely yield erroneously inaccurate evaluation results.

A seismic/well data loaded with the wrong **Cartographic Reference System (CRS)** will be at a wrong position and the output of the interpretation will with no hesitation be wrong as the location is totally wrong.

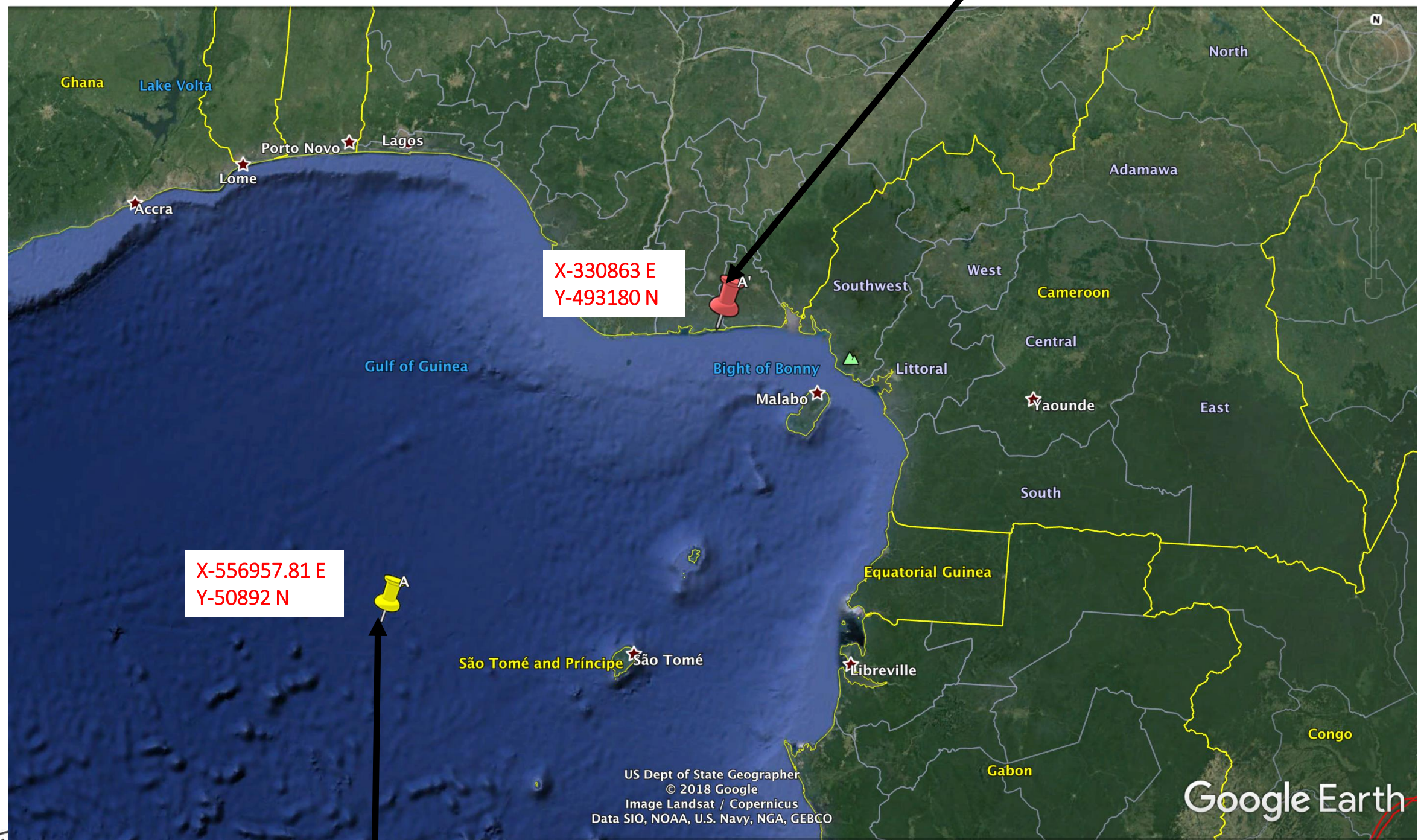




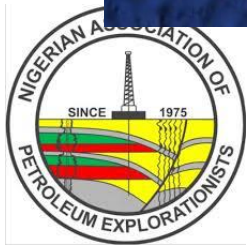
# Example

-Wrong Cartographic Reference System (UTM & TM)

CORRECT LOCATION



WRONG LOCATION



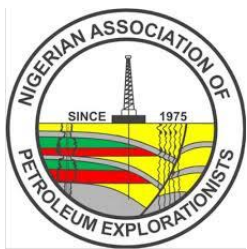
Common Pitfalls in Field Evaluations

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# Data Reliability

The level of reliability on the data is also important and is dependent on some factors such as;

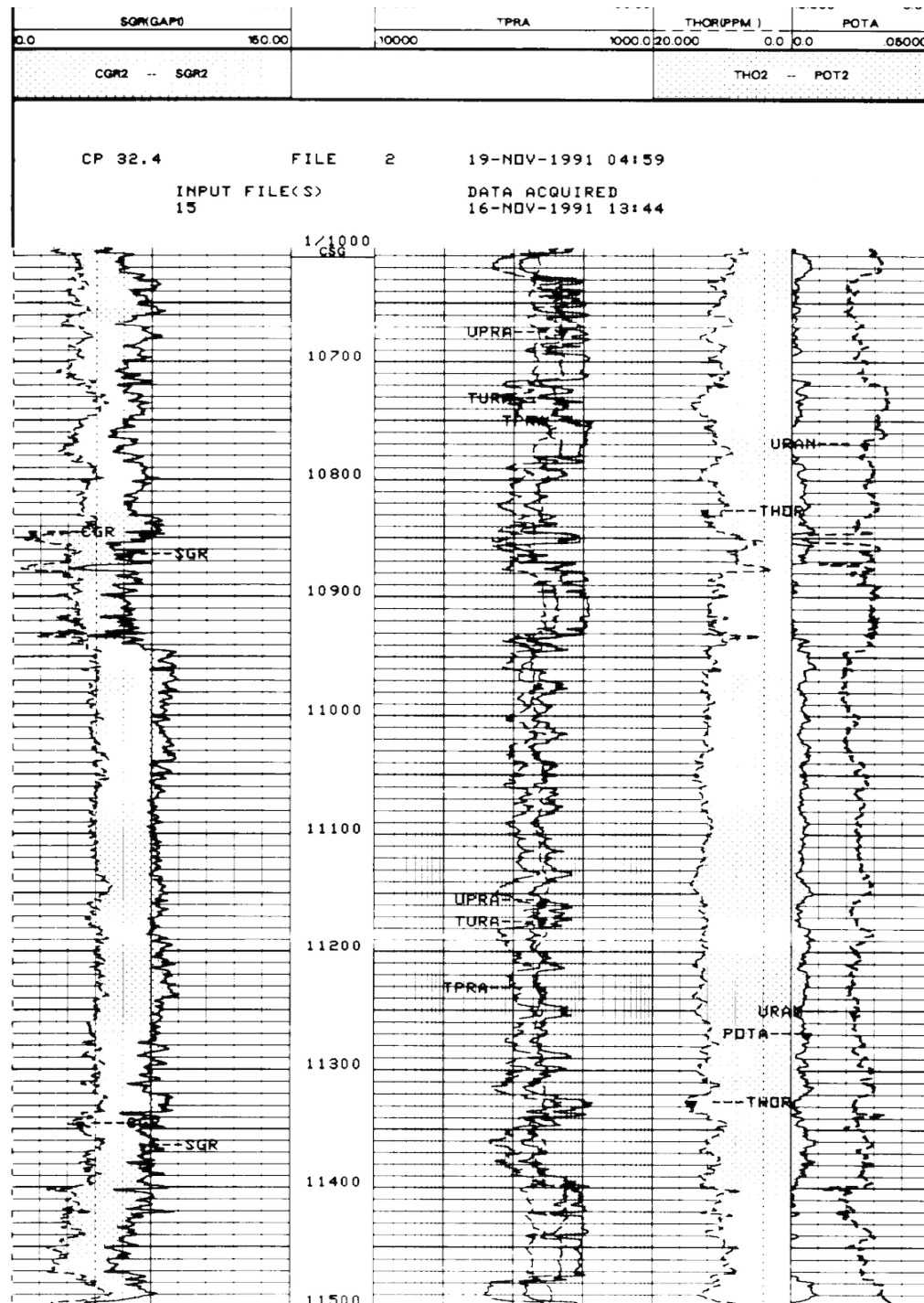
- ✓ Data Accuracy
- ✓ Data Completeness and
- ✓ Data Quality



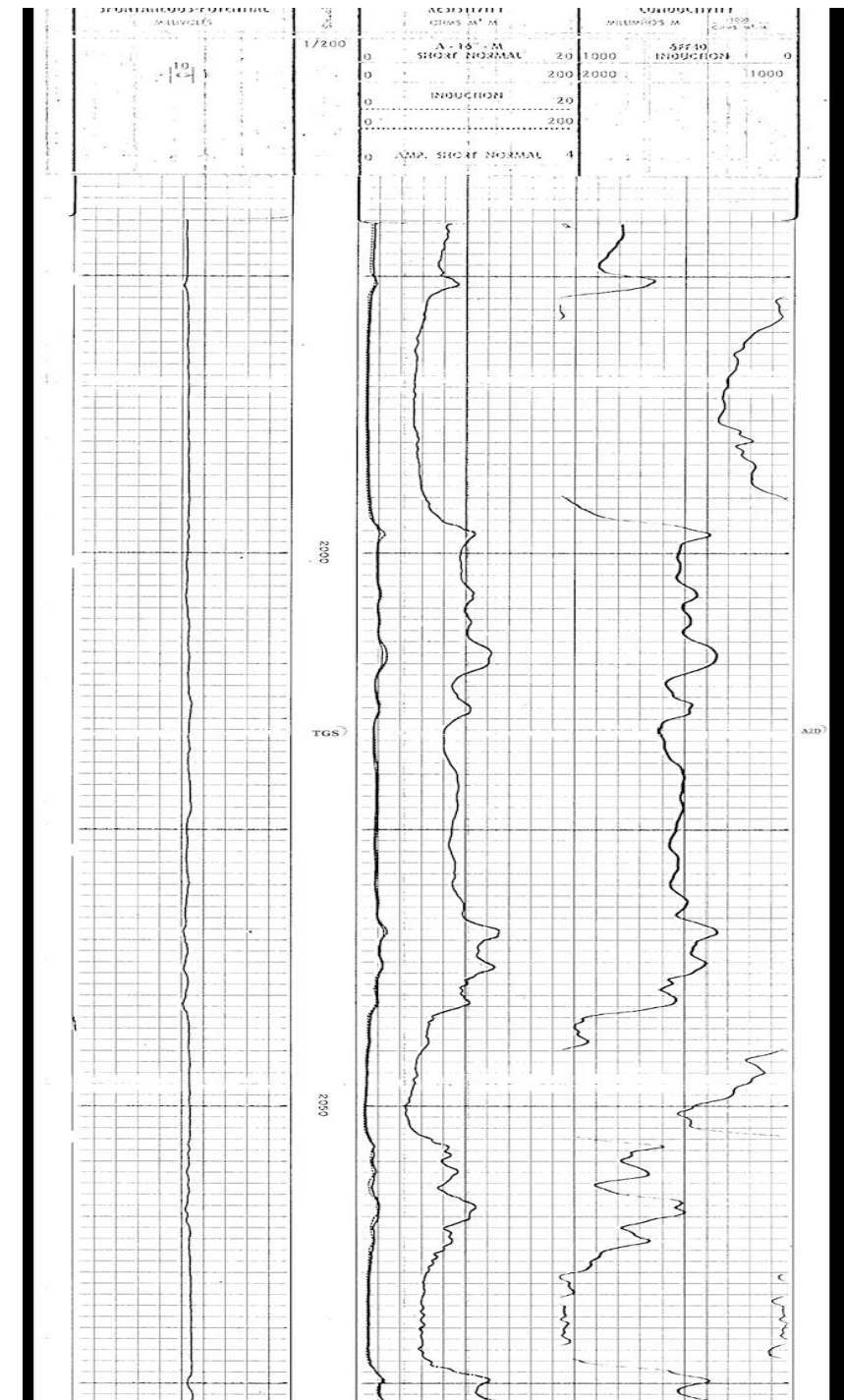


# Common Pitfalls”(example)

## -Poor data Clarity (Scale)



1/1000



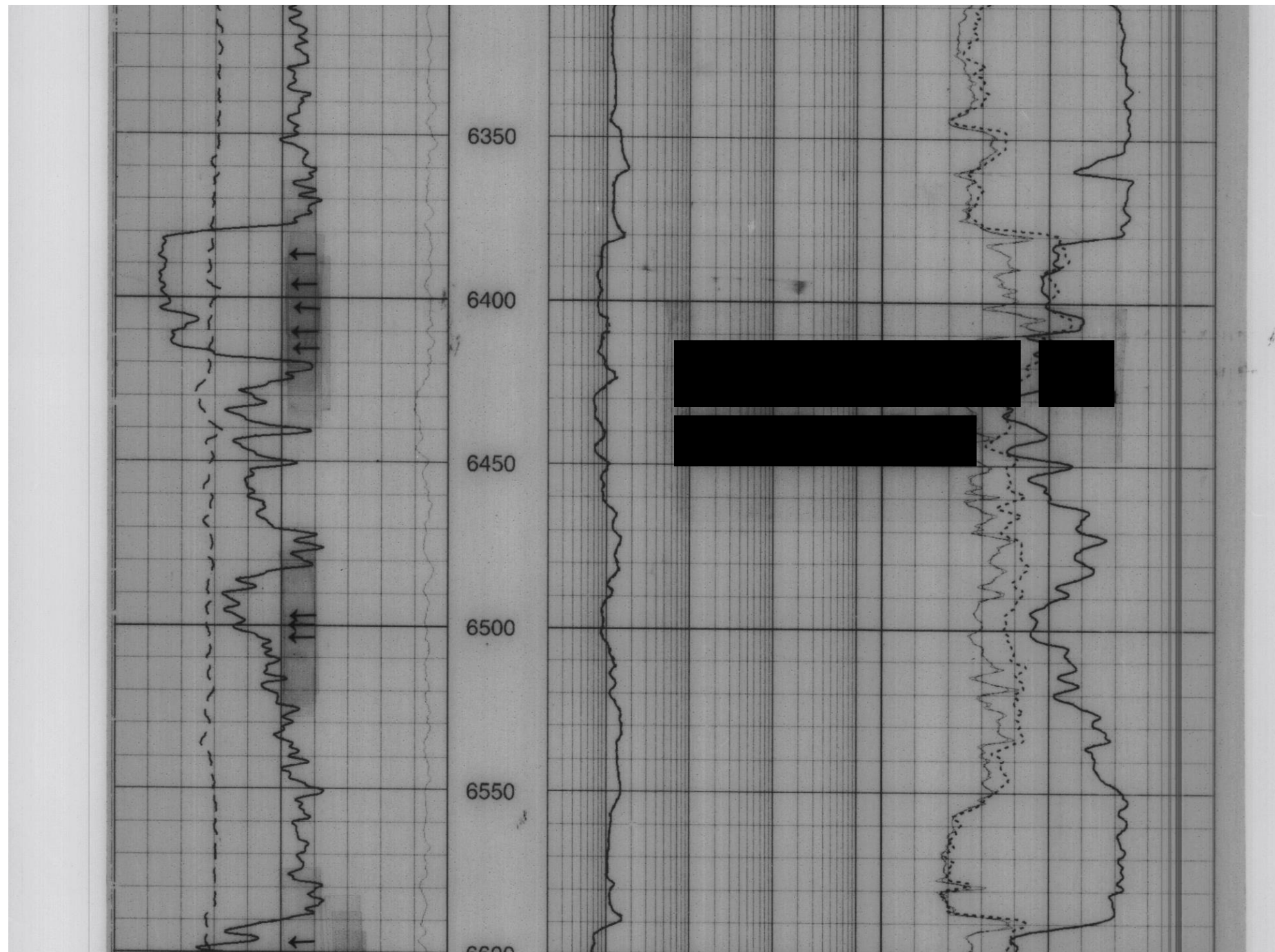
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Quality induced Error: Analog-to-Digital Transformation



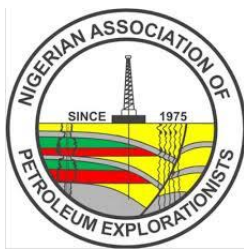
# Common Pitfalls”(example)

-Poor data Clarity



**Quality induced Error: Analog-to-Digital Transformation**

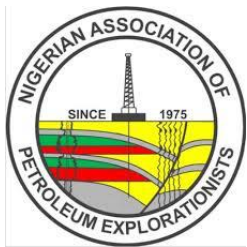
Common Pitfalls in Field Evaluations



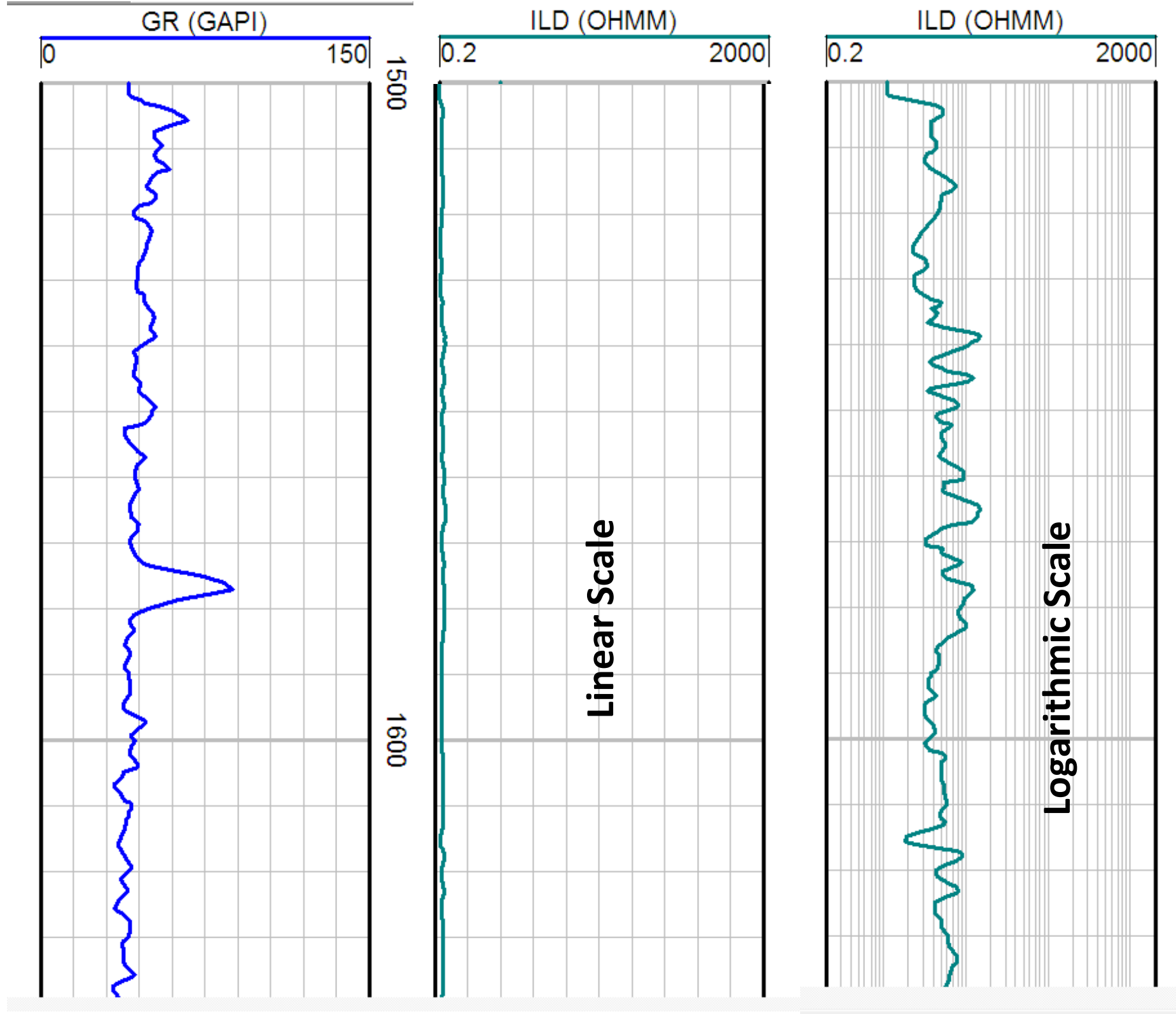
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# Human induced Errors

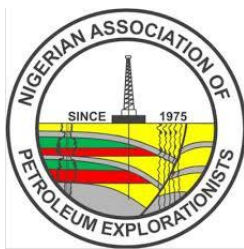
- Typographic errors
- Deviation
- Longitude/Latitude Switching
- Units Issues (Meters vs Feet)
- Analog-to-Digital Transformation



# Common Pitfalls”(example)



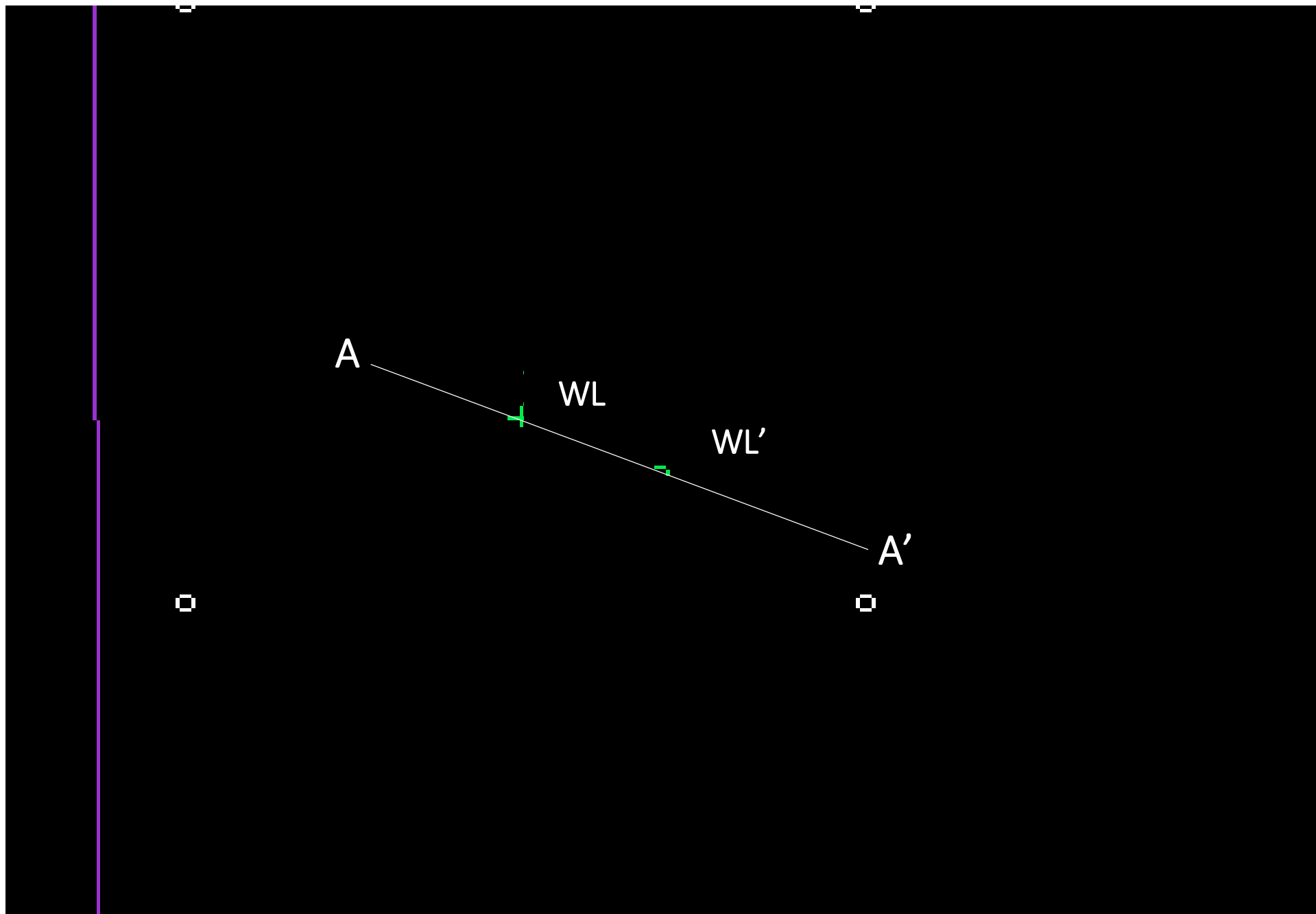
**Human induced Error: Analog-to-Digital Transformation**





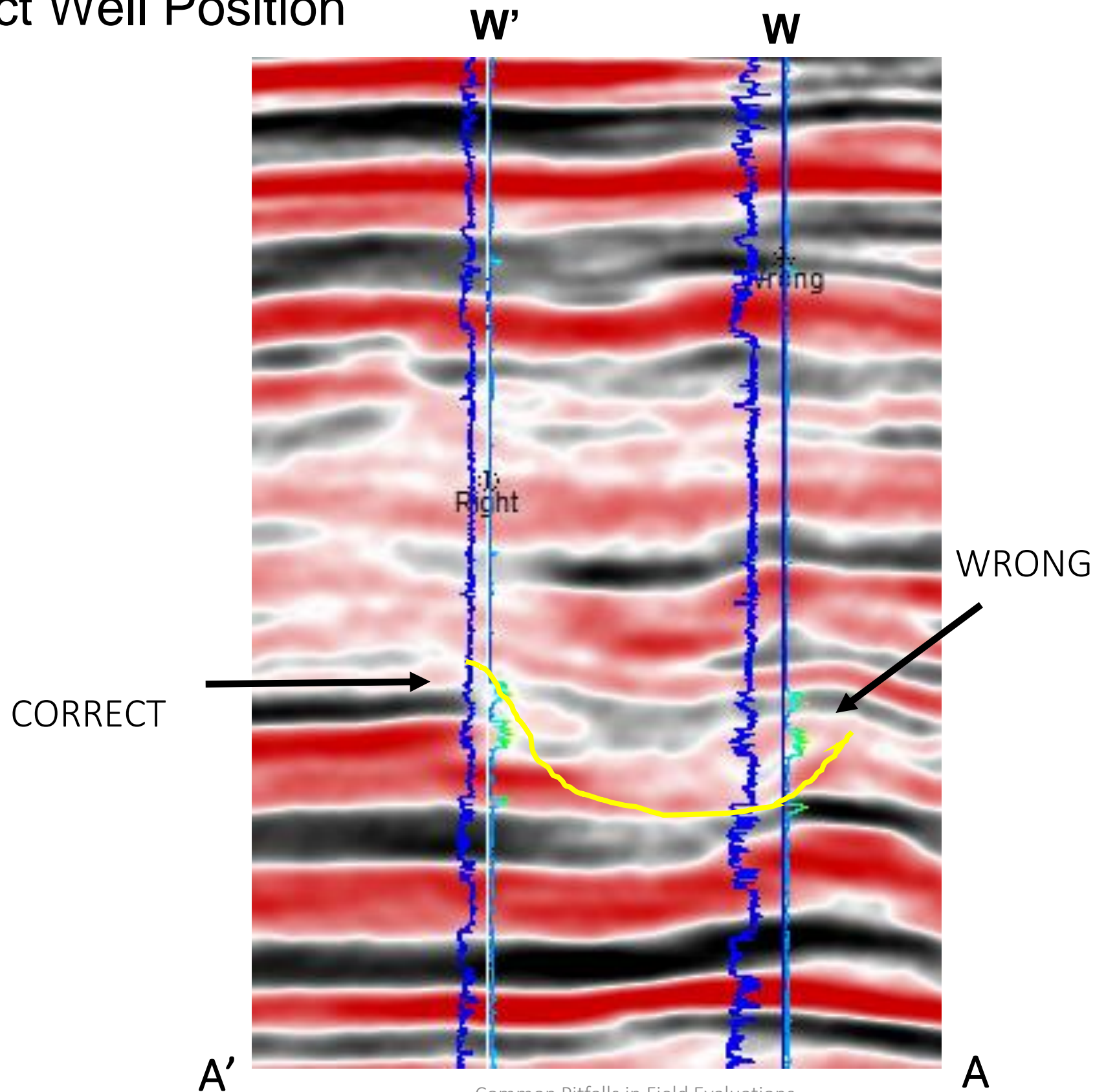
# Common Pitfalls”(example)

-Misrepresented Data



# Common Pitfalls”(example)

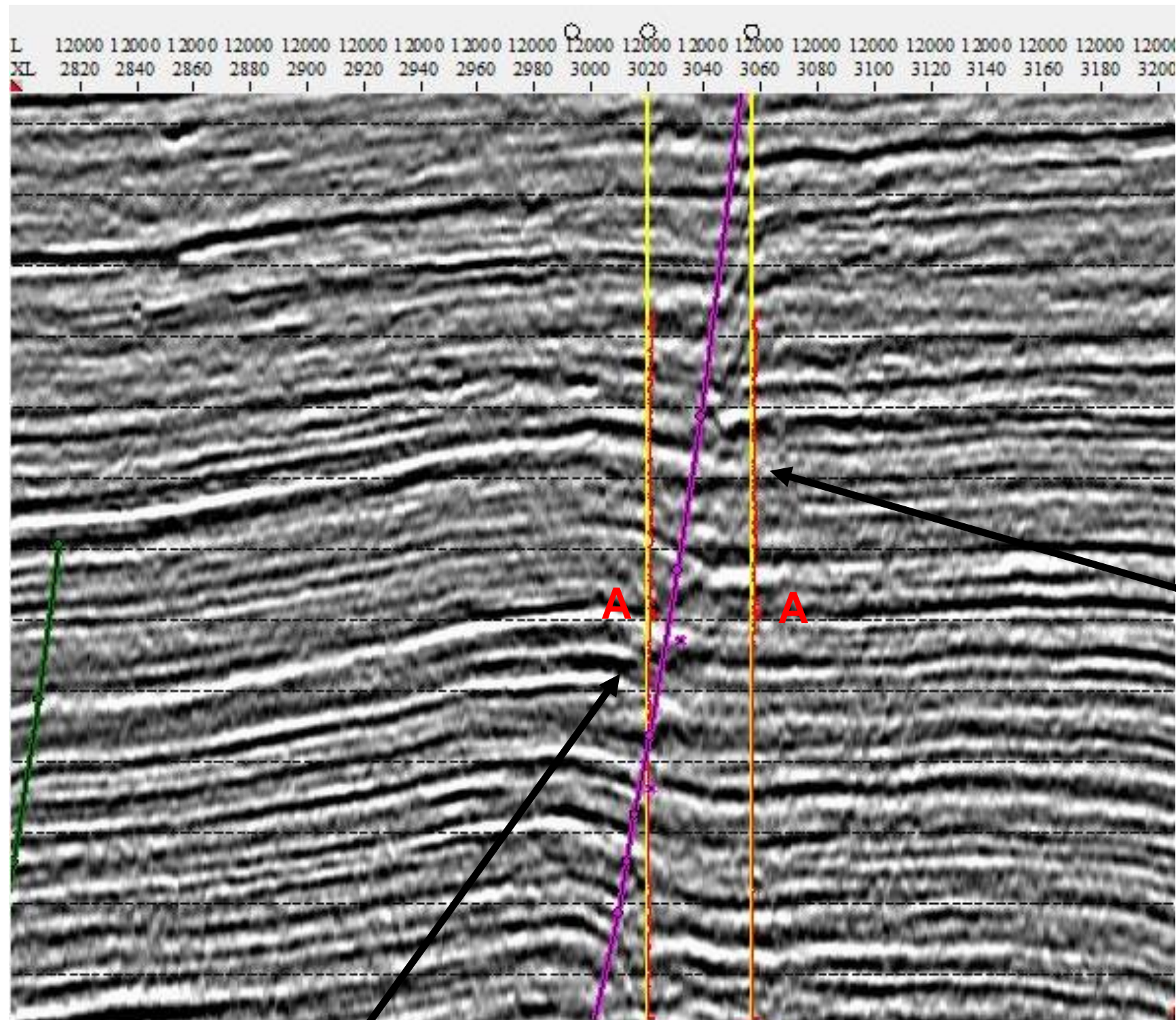
-Incorrect Well Position





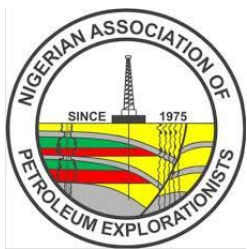
# Examples

## -Incorrect Well Position



RIGHT LOCATION

WRONG LOCATION



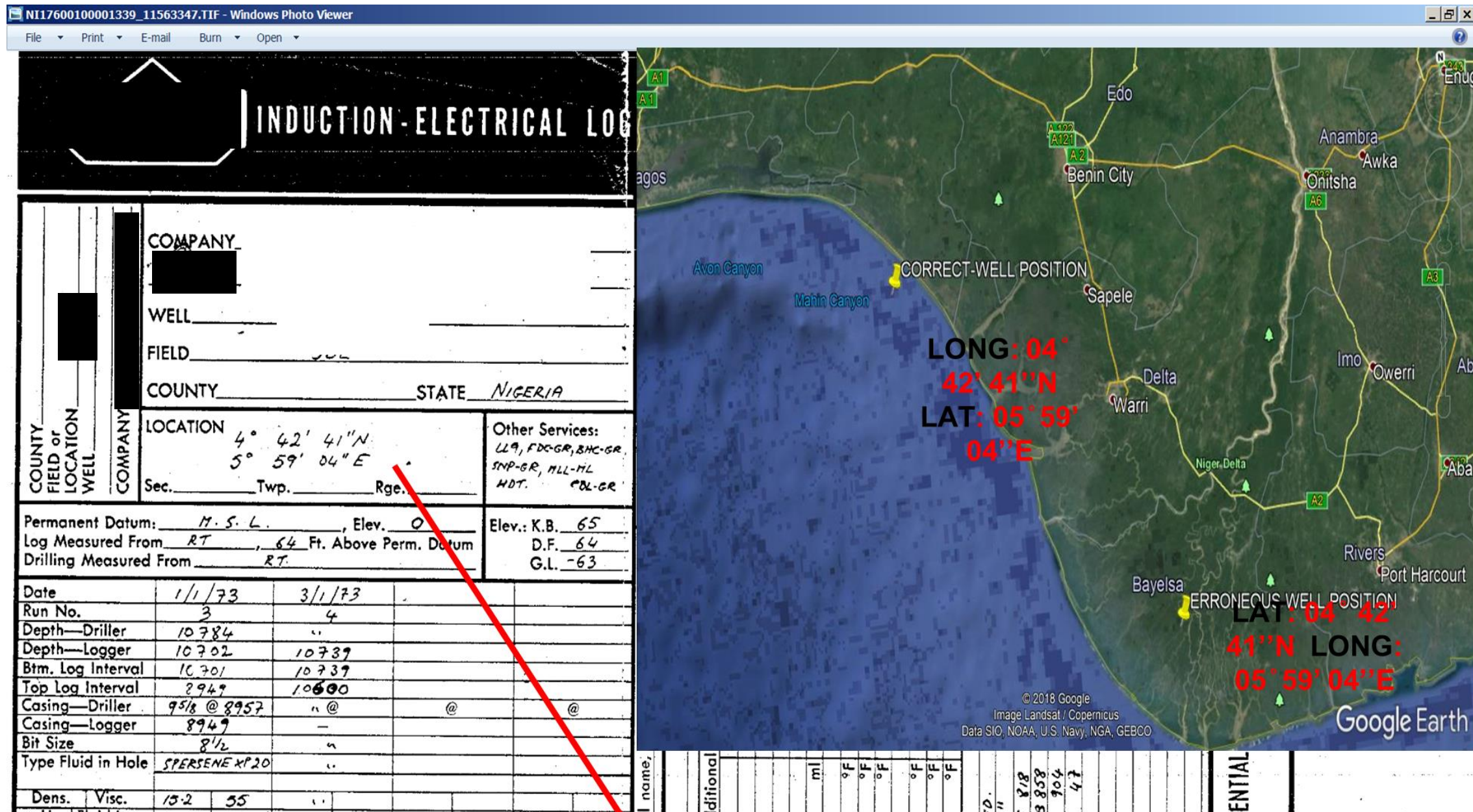
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# Common Pitfalls”(example)

-Longitude/Latitude Switching (misrepresentation)

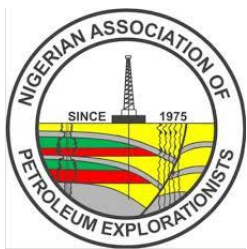


LAT: 04° 42' 41" N LONG: 05° 59' 04" E ( Erroneous positioning)  
 LONG: 04° 42' 41" N LAT: 05° 59' 04" E ( Correct positioning)

SWITCHING OF EASTING & NORTHING

# Conclusion

- **Both exploration data acquisition and evaluation can introduce errors that can mar overall mapping and resource estimation**
- **Early exploration processes were faced by several operational uncertainties**
- **'Geo-Referencing' has helped to resolve several errors due to location uncertainty common in older fields**
- **Technology and computing power have evolved significantly resulting in better understanding of the subsurface**
- **These pitfalls can be resolved by painstakingly ensuring a robust QA/QC**



Questions/Comments?

*Thank  
you*

