2D Nigerian Acquisition & Processing Flow

Acquisition

1998 data

Date Acquired:	1998
Acquisition Company:	Veritas DGC Limited
Number of Vessels:	1
Vessel Name:	R/V Professor Kurentsov
Number of Guns:	1
Number of Cables:	1
Number of Channels:	240
Record Length:	12 Seconds
Shot Interval:	50m
Group Interval:	25m
CDP Spacing:	12.5m
Near Offset:	94m
Fold of Coverage:	60

Gun Depth:	6m average	**Cable Depth:**	8m average
Air Pressure:	2000PSI	**Cable Length:**	6000m
Volume:	3450cu ins.	**Traces per Cable:**	240
Type of Gun:	Airgun Array	**Cable Type:**	DSS-240 DIGITAL

Vessel Positioning;

Primary:	Satellite DGPS	**Secondary:**	MN8

1999 data

Date Acquired:	1999
Acquisition Company:	Veritas DGC Limited
Number of Vessels:	1
Vessel Name:	R/V New Venture
Number of Guns:	1
Number of Cables:	1
Number of Channels:	480
Record Length:	12 Seconds
Shot Interval:	50m
Group Interval:	12.5m
CDP Spacing:	6.25m
Near Offset:	125m
Fold of Coverage:	60

Gun Depth:	6m average	**Cable Depth:**	8m average
Air Pressure:	2000PSI	**Cable Length:**	6000m
Volume:	3450cu ins.	**Traces per Cable:**	480
Type of Gun:	Airgun Array	**Cable Type:**	SYNTRON RDA

Vessel Positioning;

Primary:	Dual MRDGPS combined

Processing

1) Reformat & trace edit
2) Resample to 4ms sample interval.
3) Minimum phase conversion using the far field gun signatures.
4) 2D geometry definition.
5) Swell noise attenuation incorporating a low cut filter and Veritas' 'despiking' algorithm.
6) Spherical divergence: scalar proportional to T above the WB and V^2T below the WB.
7) 0.5 K-filter applied to the 1999 data only.
8) Alternate channel drop for the 1999 data to increase the group interval from 12.5 to 25 metres.
9) Shot point interpolation run on common receiver gathers. This reduced the shotpoint interval from 50 metres to 25 metres, doubling the fold from 60 to 120.
10) Picked velocities at 1km interval.
11) 0.5 K-filter.
12) High*er* resolution radon demultiple.
13) Interpolated traces dropped – fold reduced back down to 60.
14) Band limited spiking decon.
15) Time variant filter, water depth dependent.
16) UTMOST, full pre-stack, ray traced, Kirchhoff time migration run on each common offset (60 fold).
17) ½ km velocity field picked – 2^{nd} & 4^{th} order velocities.
18) High*er* resolution radon demultiple.
19) Residual CDP flattening. Both 2^{nd} & 4^{th} order velocities updated to form a final velocity field.
20) Phase matching of the Veritas 1999 survey to the Veritas 1998 survey and subsequent zero phasing.
21) Inner and Outer Mutes.
22) Shot/receiver static of 10ms.
23) Stack: 1/fold scaling used.
24) Time variant filter, water depth dependent.
25) Display scalar.
26) Generation of AVO products.