

## APPENDIX A

### Data Set

Dataset used in this study is in Nam Con Son Basin; it was provided by PetroVietnam. The dataset is 3D seismic PSDM final gathers in time. Number of traces in dataset is 14,603,144. Moreover, the receiver arrays were located apart 25 m. Shot points station were spaced 25 m apart.

The acquisition bin grid is 12.5x12.5 m that was created by 25 m receiver spacing and 25 m source spacing. Seismic time recorded length in dataset is 5000 ms with sample rate of 4 ms. The 3D data contain 143.049<sup>0</sup> southwest-northeast oriented 381 inlines and 53<sup>0</sup> northwest-southeast 426 cross-lines (Figure A.1).

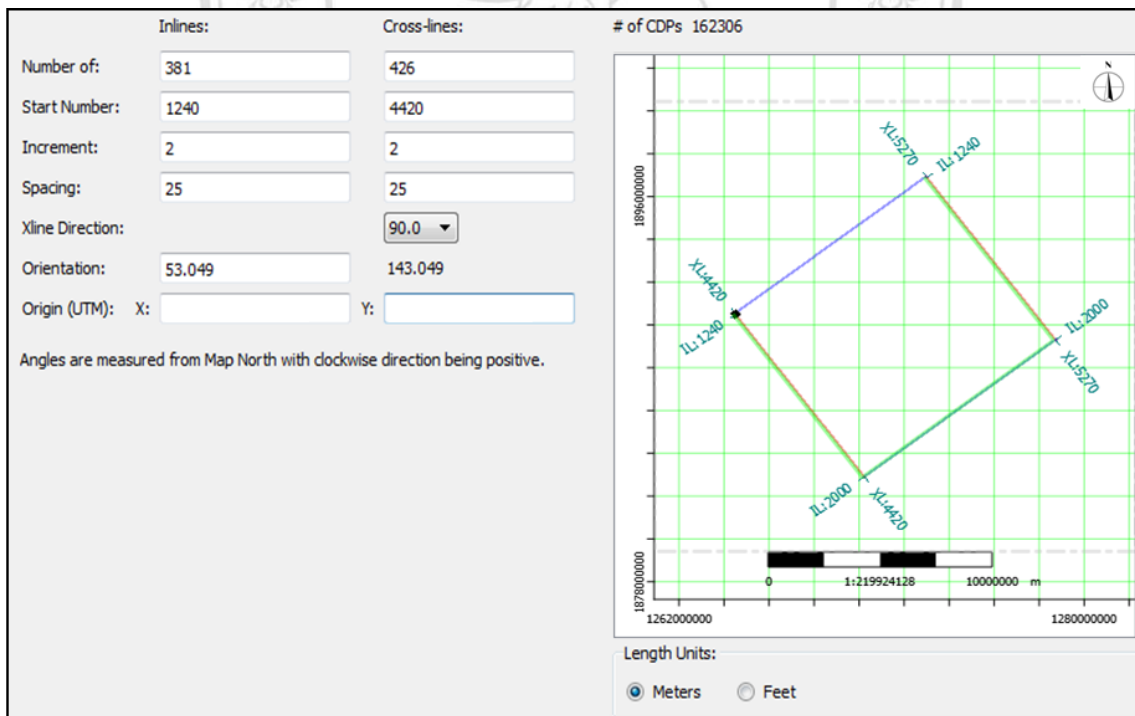


Figure A.1: 3D seismic dataset information.

Well A in this independent study was drilled in 1996 to an extended total depth (TD) of 4155 mBRT and classified as a discovery well. Water depth in Well A is 138 m and

rotary table elevation (RTE) is 29 m. Well data contain various logs as mentioned with units and symbols in Table A.1.

Table A.1: Different types of well logs in the dataset with their abbreviations and units.

<b>Abbreviation</b>	<b>Units</b>	<b>Type of well log</b>
GR	API	Gamma Ray
DT	$\mu\text{s}/\text{ft}$	P-wave Velocity
DTS	$\mu\text{s}/\text{ft}$	S-wave Velocity
DRHO	g/cc	Density Correction
RHOB	g/cc	Bulk Density
LLD	Ohm.m	Deep Lateral Log
LLS	Ohm.m	Medium Lateral Log
MSFL	Ohm.m	Micro Resistivity Log
NPHI	v/v	Neutron Porosity
BS	Inch	Bit Size
CALI	Inch	Caliper
CS	ms	Check Shots

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## APPENDIX B

### VSP Data

Vertical seismic profiling (VSP) is a seismic technique that measures acoustic wave between a well bore and the surface. Applications of VSP to surface seismic data include: precise correlation of surface seismic data with depth, separation of primary seismic reflections from interbed multiples, calibration seismic reflectivity coefficients derived from well log data and providing seismic processing parameters. Unfortunately, the VSP data in this study is not a completed dataset, only time depth relationship from the VSP data is provided. Therefore, it is just used in checkshot correction part to calibrating sonic log data with VSP data.

Table B.1: VSP data of well A.

Level	Depth (mBRT)	Corrected Transit Time (ms)	Remarks
1	2400	1042.56	Checkshot
2	2500	1075.24	Checkshot
3	2600	1109.80	Checkshot
4	2705	1148.67	Checkshot
5	2720	1154.23	VSP
6	2735	1160.03	"
7	2750	1165.54	"
8	2765	1171.20	"
9	2780	1176.79	"
10	2795	1182.35	"
11	2810	1188.00	"
12	2825	1193.57	"
13	2840	1199.17	"
14	2855	1204.19	"

Level	Depth (mBRT)	Corrected Transit Time (ms)	Remarks
15	2870	1209.62	VSP
16	2885	1215.21	"
17	2900	1220.94	"
18	2915	1226.27	"
19	2930	1232.04	"
20	2945	1237.52	"
21	2960	1243.22	"
22	2975	1248.93	"
23	2990	1254.53	"
24	3005	1260.10	"
25	3020	1265.12	"
26	3035	1270.65	"
27	3050	1276.17	"
28	3065	1281.88	"
29	3080	1287.78	"
30	3095	1293.15	"
31	3110	1299.26	"
32	3125	1305.00	"
33	3140	1310.34	"
34	3155	1315.69	"
35	3170	1321.11	"
36	3185	1326.61	"
37	3200	1332.29	"
38	3215	1337.75	"
39	3230	1343.44	"
40	3245	1348.42	"
41	3260	1354.37	"
42	3275	1359.46	"
43	3290	1363.52	"

Level	Depth (mBRT)	Corrected Transit Time (ms)	Remarks
44	3305	1369.18	VSP
45	3320	1374.59	"
46	3335	1379.32	"
47	3350	1385.00	"
48	3365	1390.15	"
49	3380	1395.27	"
50	3395	1400.48	"
51	3410	1404.85	"
52	3425	1409.38	"
53	3440	1414.56	"
54	3455	1419.18	"
55	3470	1423.86	"
56	3485	1428.48	"
57	3500	1432.65	"
58	3515	1437.22	"
59	3530	1441.52	"
60	3545	1446.16	"
61	3560	1450.74	"
62	3575	1455.12	"
63	3625	1468.57	"
64	3640	1473.09	"
65	3655	1477.21	"
66	3670	1481.67	"
67	3685	1686.30	"
68	3700	1490.28	"
69	3715	1494.59	"
70	3730	1498.73	"
71	3745	1503.36	"
72	3760	1507.09	"

Level	Depth (mBRT)	Corrected Transit Time (ms)	Remarks
73	3775	1511.51	VSP
74	3790	1515.79	"
75	3805	1520.25	"
76	3820	1524.59	"
77	3835	1529.10	"
78	3850	1533.37	"
79	3865	1537.52	"
80	3880	1542.10	"
81	3895	1546.58	"
82	3910	1550.94	"
83	3925	1555.44	"
84	3940	1559.77	"
85	3955	1564.23	"
86	3970	1568.56	"
87	3984	1572.43	"
88	4000	1576.30	"
89	4015	1580.04	"
90	4030	1584.26	"
91	4045	1588.64	"
92	4060	1593.06	"
93	4075	1597.13	"
94	4090	1600.81	"
95	4105	1604.79	"
96	4120	1608.50	"
97	4135	1612.25	"
98	4150	1616.16	"

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