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LAMPIRAN

Lampiran 1. Tabel perhitungan kekuatan batas FPSO menggunakan metode NLFEA kondisi *sagging* dan *hogging* model 1

SAGGING				HOGGING			
Moment	Rotation	Curvature		Moment	Rotation	Curvature	
0	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0.00E+00	0.00E+00
-2.58E+11	-1.28E-05	-4.07E-09	-4.07E-03	1.82E+12	9.00E-05	2.87E-08	2.87E-02
-8.58E+11	-4.26E-05	-1.36E-08	-1.36E-02	3.64E+12	1.80E-04	5.73E-08	5.73E-02
-1.12E+12	-5.56E-05	-1.77E-08	-1.77E-02	6.09E+12	3.01E-04	9.60E-08	9.60E-02
-1.40E+12	-6.95E-05	-2.21E-08	-2.21E-02	8.06E+12	3.99E-04	1.27E-07	1.27E-01
-2.23E+12	-1.11E-04	-3.55E-08	-3.55E-02	9.93E+12	4.92E-04	1.57E-07	1.57E-01
-2.25E+12	-1.12E-04	-3.56E-08	-3.56E-02	1.16E+13	5.90E-04	1.88E-07	1.88E-01
-3.48E+12	-1.72E-04	-5.49E-08	-5.49E-02	1.21E+13	6.49E-04	2.07E-07	2.07E-01
-4.84E+12	-2.39E-04	-7.62E-08	-7.62E-02	1.25E+13	7.25E-04	2.31E-07	2.31E-01
-6.07E+12	-3.00E-04	-9.56E-08	-9.56E-02	1.25E+13	7.39E-04	2.35E-07	2.35E-01
-7.30E+12	-3.61E-04	-1.15E-07	-1.15E-01	1.26E+13	7.48E-04	2.38E-07	2.38E-01
-8.50E+12	-4.20E-04	-1.34E-07	-1.34E-01	1.26E+13	7.57E-04	2.41E-07	2.41E-01
-9.66E+12	-4.78E-04	-1.52E-07	-1.52E-01	1.26E+13	7.57E-04	2.41E-07	2.41E-01
-1.07E+13	-5.35E-04	-1.70E-07	-1.70E-01	1.25E+13	7.55E-04	2.41E-07	2.41E-01
-1.17E+13	-5.94E-04	-1.89E-07	-1.89E-01	1.25E+13	7.55E-04	2.41E-07	2.41E-01
-1.21E+13	-6.51E-04	-2.07E-07	-2.07E-01	1.25E+13	7.57E-04	2.41E-07	2.41E-01
-1.23E+13	-6.98E-04	-2.22E-07	-2.22E-01	1.23E+13	7.47E-04	2.38E-07	2.38E-01
-1.24E+13	-7.04E-04	-2.24E-07	-2.24E-01	1.19E+13	0.000728	2.32E-07	2.32E-01
-1.24E+13	-7.06E-04	-2.25E-07	-2.25E-01	1.15E+13	0.000705	2.25E-07	2.25E-01
-1.24E+13	-7.07E-04	-2.25E-07	-2.25E-01	1.11E+13	0.000689	2.19E-07	2.19E-01
-1.24E+13	-7.11E-04	-2.27E-07	-2.27E-01	1.11E+13	0.000688	2.19E-07	2.19E-01
-1.25E+13	-7.23E-04	-2.30E-07	-2.30E-01	1.11E+13	0.000689	2.19E-07	2.19E-01
-1.26E+13	-7.45E-04	-2.37E-07	-2.37E-01	1.11E+13	0.000689	2.20E-07	2.20E-01
-1.26E+13	-7.53E-04	-2.40E-07	-2.40E-01	1.11E+13	0.00069	2.20E-07	2.20E-01
-1.26E+13	-7.53E-04	-2.40E-07	-2.40E-01				
-1.26E+13	-7.53E-04	-2.40E-07	-2.40E-01				
-1.26E+13	-7.53E-04	-2.40E-07	-2.40E-01				
	)4	-2.40E-07	-2.40E-01				
	)4	-2.40E-07	-2.40E-01				
	)4	-2.41E-07	-2.41E-01				

Lampiran 2. Tabel perhitungan kekuatan batas FPSO menggunakan metode NLFEA kondisi *sagging* dan *hogging* model 2

SAGGING				HOGGING			
Moment	Rotation	Curvature		Moment	Rotation	Curvature	
0	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0.00E+00	0.00E+00
-1.10E+12	-5.78E-05	-1.84E-08	-1.84E-02	1.00E+12	5.26E-05	1.68E-08	1.68E-02
-1.57E+12	-8.61E-05	-2.74E-08	-2.74E-02	2.00E+12	1.05E-04	3.35E-08	3.35E-02
-3.29E+12	-1.91E-04	-6.09E-08	-6.09E-02	3.26E+12	1.71E-04	5.46E-08	5.46E-02
-3.99E+12	-2.34E-04	-7.47E-08	-7.47E-02	4.37E+12	2.29E-04	7.31E-08	7.31E-02
-4.21E+12	-2.48E-04	-7.90E-08	-7.90E-02	5.47E+12	2.87E-04	9.15E-08	9.15E-02
-4.55E+12	-2.69E-04	-8.58E-08	-8.58E-02	6.55E+12	3.44E-04	1.10E-07	1.10E-01
-4.82E+12	-2.87E-04	-9.14E-08	-9.14E-02	7.59E+12	3.99E-04	1.27E-07	1.27E-01
-5.10E+12	-3.05E-04	-9.71E-08	-9.71E-02	8.58E+12	4.51E-04	1.44E-07	1.44E-01
-5.39E+12	-3.24E-04	-1.03E-07	-1.03E-01	9.49E+12	5.01E-04	1.60E-07	1.60E-01
-5.65E+12	-3.41E-04	-1.09E-07	-1.09E-01	1.02E+13	5.48E-04	1.74E-07	1.74E-01
-5.81E+12	-3.60E-04	-1.15E-07	-1.15E-01	1.06E+13	6.02E-04	1.92E-07	1.92E-01
-5.82E+12	-3.70E-04	-1.18E-07	-1.18E-01	1.09E+13	6.47E-04	2.06E-07	2.06E-01
-5.82E+12	-3.70E-04	-1.18E-07	-1.18E-01	1.12E+13	7.02E-04	2.24E-07	2.24E-01
-5.93E+12	-3.71E-04	-1.18E-07	-1.18E-01	1.12E+13	7.16E-04	2.28E-07	2.28E-01
-5.97E+12	-3.74E-04	-1.19E-07	-1.19E-01	1.12E+13	7.14E-04	2.27E-07	2.27E-01
-6.13E+12	-3.77E-04	-1.20E-07	-1.20E-01	1.10E+13	7.14E-04	2.27E-07	2.27E-01
-6.13E+12	-3.85E-04	-1.23E-07	-1.23E-01	1.10E+13	7.11E-04	2.26E-07	2.26E-01
-6.32E+12	-3.95E-04	-1.26E-07	-1.26E-01	1.10E+13	7.11E-04	2.26E-07	2.26E-01
-6.48E+12	-3.98E-04	-1.27E-07	-1.27E-01	1.10E+13	7.11E-04	2.26E-07	2.26E-01
-6.67E+12	-4.16E-04	-1.33E-07	-1.33E-01	1.10E+13	7.11E-04	2.26E-07	2.26E-01
-6.75E+12	-4.17E-04	-1.33E-07	-1.33E-01	1.10E+13	7.11E-04	2.26E-07	2.26E-01
-6.85E+12	-4.27E-04	-1.36E-07	-1.36E-01	1.10E+13	7.10E-04	2.26E-07	2.26E-01
-6.89E+12	-4.31E-04	-1.37E-07	-1.37E-01	1.10E+13	7.11E-04	2.27E-07	2.27E-01
-6.92E+12	-4.32E-04	-1.38E-07	-1.38E-01	1.10E+13	7.11E-04	2.26E-07	2.26E-01
-7.00E+12	-4.37E-04	-1.39E-07	-1.39E-01	1.10E+13	7.10E-04	2.26E-07	2.26E-01
-7.04E+12	-4.40E-04	-1.40E-07	-1.40E-01	1.10E+13	7.10E-04	2.26E-07	2.26E-01
-7.08E+12	-4.43E-04	-1.41E-07	-1.41E-01	1.10E+13	7.11E-04	2.26E-07	2.26E-01
-7.13E+12	-4.45E-04	-1.42E-07	-1.42E-01	1.10E+13	7.10E-04	2.26E-07	2.26E-01
-7.14E+12	-4.45E-04	-1.42E-07	-1.42E-01	1.11E+13	7.16E-04	2.28E-07	2.28E-01
	4	-1.43E-07	-1.43E-01	1.12E+13	7.25E-04	2.31E-07	2.31E-01
				1.12E+13	7.26E-04	2.31E-07	2.31E-01
				1.11E+13	7.23E-04	2.30E-07	2.30E-01

				1.11E+13	7.20E-04	2.29E-07	2.29E-01
				1.10E+13	7.16E-04	2.28E-07	2.28E-01
				1.10E+13	7.14E-04	2.27E-07	2.27E-01
				1.09E+13	7.14E-04	2.27E-07	2.27E-01
				1.09E+13	7.14E-04	2.27E-07	2.27E-01
				1.09E+13	7.13E-04	2.27E-07	2.27E-01
				1.09E+13	7.13E-04	2.27E-07	2.27E-01
				1.09E+13	7.12E-04	2.27E-07	2.27E-01
				1.09E+13	7.12E-04	2.27E-07	2.27E-01
				1.09E+13	7.10E-04	2.26E-07	2.26E-01
				1.08E+13	7.09E-04	2.26E-07	2.26E-01
				1.10E+13	7.21E-04	2.30E-07	2.30E-01
				1.10E+13	7.21E-04	2.30E-07	2.30E-01
				1.10E+13	7.21E-04	2.30E-07	2.30E-01

LAMPIRAN

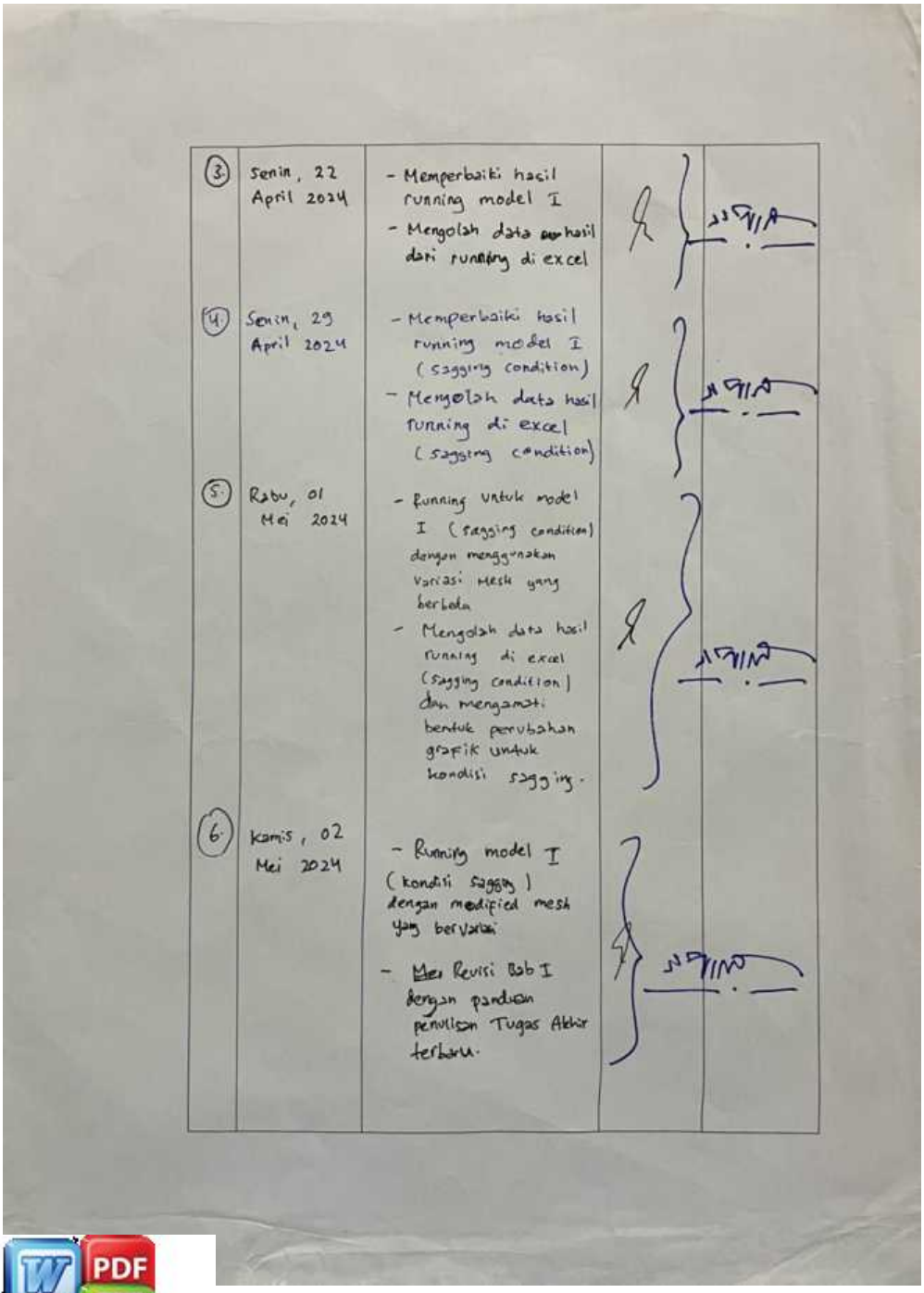
Lampiran 3. Midship section

Lampiran 4. Kartu kontrol asistensi

LEMBAR ASISTENSI SKRIPSI

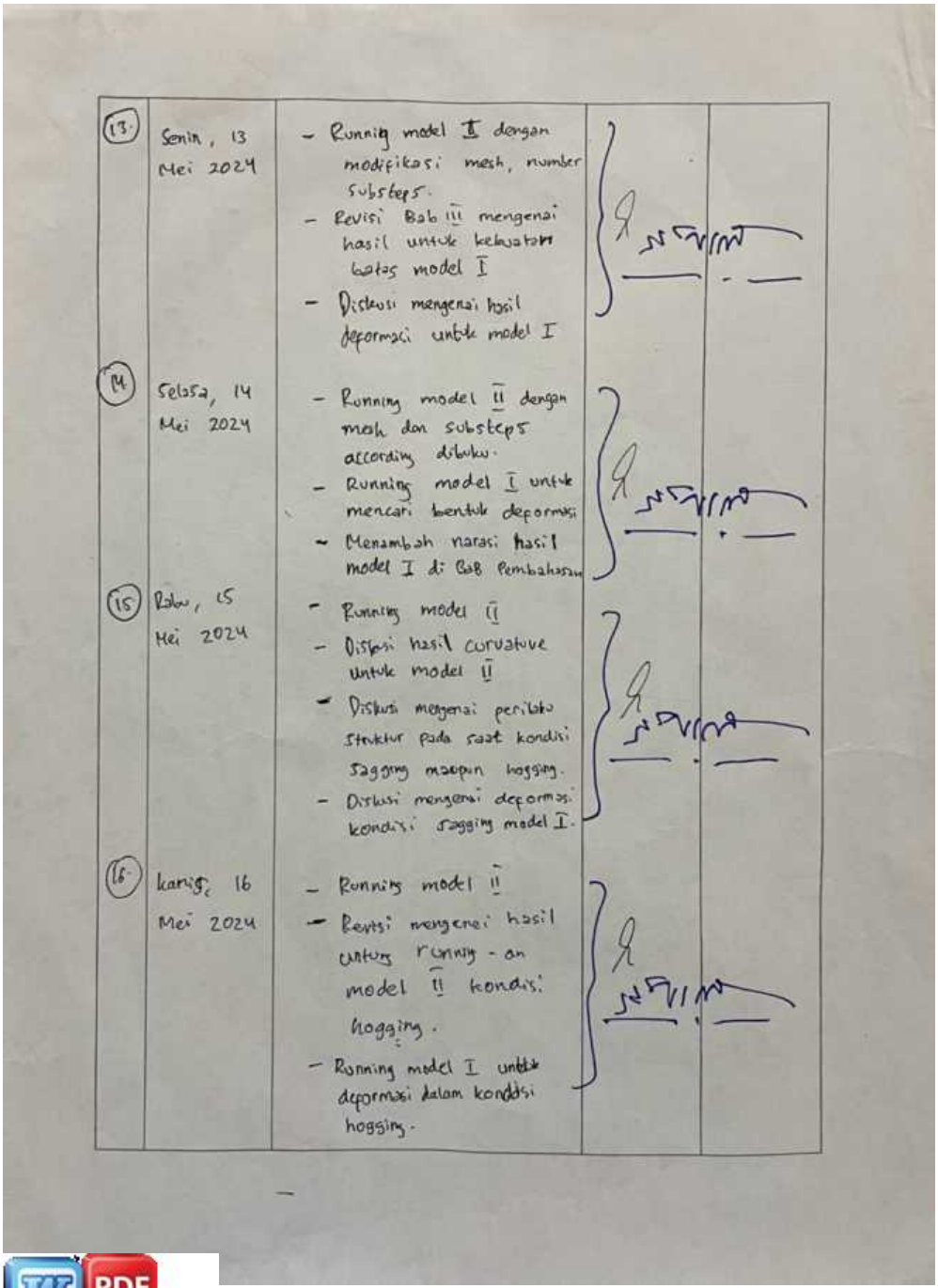
Nama : Musdalifah Akbar Simanjuntak
NIM : D081201009
Judul Skripsi : Pengaruh *TOPSIDE TANK* Pada FPSO Terhadap Kekuatan Membujur Kapal
Peminatan : Ocean Structure Analysis Research Laboratory (OSAREL)
Pembimbing : Prof. Muhammad Zubair Muis Alie, ST., MT., Ph.D

NO.	Hari/Tanggal/ Bulan/Tahun	Deskripsi	Paraf Mahasiswa	Paraf Pembimbing
~~1~~	~~Idealisasi model~~			
1.	Selasa, 16 April 2024	- Idealisasi Model - Belajar mengenai penentuan meshing dan substeps. - Belajar mengenai tahapan rigid dan MPC. - Belajar mengenai problem solving hasil dari running (list data yang tidak lengkap)		
(2)	Jum'at, 19 April 2024	- Me-rigid untuk bagian depan (fore) dan bagian belakang (AFT) - Running program model 1		



3.	Senin, 22 April 2024	- Memperbaiki hasil running model I - Mengolah data hasil dari running di excel	
4.	Senin, 29 April 2024	- Memperbaiki hasil running model I (sagging condition) - Mengolah data hasil running di excel (sagging condition)	
5.	Rabu, 01 Mei 2024	- Running untuk model I (sagging condition) dengan menggunakan variasi mesh yang berbeda - Mengolah data hasil running di excel (sagging condition) dan mengamati bentuk perubahan grafik untuk kondisi sagging.	
6.	Kamis, 02 Mei 2024	- Running model I (kondisi sagging) dengan modified mesh yang bervariasi - Revisi Bab I dengan panduan penulisan Tugas Akhir terbaru.	

7.	Jum'at, 03 Mei 2024	- Running model I - design untuk model II untuk penampang midship tanpa adanya topside tank. - Input beban model II	
8.	Senin, 06 Mei 2024	- Running model I - Input penebalan plate - Running model II	
9.	Selasa, 07 Mei 2024	- Running model II - Input penebalan plate - modifikasi nilai mesh pada saat running model II	
10.	Rabu, 08 Mei 2024	- Running model II - Input nilai substep model II - ganti / modifikasi nilai mesh.	
11.	Kamis, 09 Mei 2024	- Running model II - Diskusi mengenai hasil grafik curvature model I - modifikasi tebal plate untuk model II	
12.	Jum'at, 10 Mei 2024	- Running model II - Pengecekan curvature untuk mode I - Revisi Bab III mengenai hasil	



13.	Senin, 13 Mei 2024	- Running model I dengan modifikasi mesh, number substeps. - Revisi Bab III mengenai hasil untuk kelayatan batas model I - Diskusi mengenai hasil deformasi untuk model I	
14.	Selasa, 14 Mei 2024	- Running model II dengan mesh dan substeps according dibuku. - Running model I untuk mencari bentuk deformasi - Menambah narasi hasil model I di Bab Pembahasan	
15.	Rabu, 15 Mei 2024	- Running model II - Diskusi hasil curvature untuk model II - Diskusi mengenai perilaku struktur pada saat kondisi sagging maupun hogging. - Diskusi mengenai deformasi kondisi sagging model I.	
16.	Kamis, 16 Mei 2024	- Running model II - Revisi mengenai hasil untuk running - an model II kondisi hogging. - Running model I untuk deformasi dalam kondisi hogging.	