 PETROBRAS	TECHNICAL REPORT		No.: I-RL-3A00.00-1000-941-PPC-001 Rev.A
	User: SANTOS BASIN		Sheet: 1 of 89
	Project: SANTOS BASIN NORTHERN PRE-SALT FIELDS		CC: PT-128.01.12881
	Unit: PRODUCTION SYSTEMS AND UNITS		
CENPES	DURATION OF EXTREME CURRENT PROFILES AND CLUSTERS OF SIMULTANEOUS METEOCEAN CONDITIONS		

INDEX OF REVISIONS

REV.	DESCRIPTION AND / OR AFFECTED SHEETS
0	ORIGINAL
A	INCLUDED NOTICE ABOUT DOCUMENT PROPERTY

Notice: The data, drawings, specifications, operation parameters, methodologies and, in general, all information contained in this document are property and/or are under legitimate use of Petróleo Brasileiro S.A. — PETROBRAS, and were prepared with reserved and/or confidential data. The use of this information is prohibited for any other purpose that has not been expressly contracted and / or previously authorized in writing by PETROBRAS. Likewise, unless previously authorized in writing by PETROBRAS, it is prohibited to copy, reproduce, adapt, translate, display and disclose: i) all or part of this document, and ii) any included information. The improper use or disclosure of this document, and any information it contains, may characterize crime of unfair competition, under the terms of Law No. 9.279 / 96, art. 195, XI, and give rise to sue for compensation of material and moral damages arising from the same fact.

Nota: Os dados, desenhos, especificações, parâmetros de operação, metodologias e, de modo geral, todas as informações contidas neste documento são de propriedade e/ou estão sob a posse legítima da Petróleo Brasileiro S.A. — PETROBRAS, e foram elaborados com dados de natureza reservada e/ou confidencial. Fica proibido o uso dessas informações para quaisquer outros fins que não tenham sido expressamente contratados e/ou previamente autorizados por escrito pela PETROBRAS. Do mesmo modo, salvo se previamente autorizadas por escrito pela PETROBRAS, fica proibida a cópia, reprodução, adaptação, tradução, exposição e divulgação: i) deste documento, no todo ou em partes, e ii) das informações nele contidas. O uso ou divulgação indevida deste documento e das informações que ele contém poderá caracterizar crime de concorrência desleal, nos termos da lei n.º 9.279/96, art. 195, XI, e dar ensejo a pedido de indenização por danos materiais e morais decorrentes do mesmo fato.

	ORIGINAL	REV. A	REV. B	REV. C	REV. D	REV. E	REV. F	REV. G	REV. H
DATE	16/10/2017	16/07/2018							
EXECUTION	ERIC/LMANOEL	JAMLIMA							
VERIFICATION	JAMLIMA	WCB							
APPROVAL	ARTHUR	ARTHUR							



INDEX

1. OBJECTIVE.....	3
2. ORIENTATION TO USE THE DOCUMENT	4
2.1 SYSTEM OF UNITS AND DIRECTION CONVENTION	4
2.2 GUIDELINES TO USE THE RAMP UP AND RAMP DOWN PROFILES	5
2.3 VERTICAL INTERPOLATION OF EXTREME CURRENT PROFILES FOR SITES WITH DISTINCT WATER DEPTHS.....	5
3. DURATION OF EXTREME CURRENT PROFILES	6
3.1 PROFILES OF EXTREME CURRENT (M/S) AT SURFACE	7
3.2 PROFILES OF EXTREME CURRENT (M/S) AT 800 M LEVEL	49
4. CLUSTERS OF SIMULTANEOUS METOCEAN CONDITIONS	65

1. OBJECTIVE

To present metocean data (oceanographic parameters) to be used in the design of offshore units and production systems at northern Santos Basin fields. It is presented ramp up and ramp down extreme current profiles from the 1-year return value to the 10-year and 100-year profiles. It is also tabulated clusters of wind, wave and current conditions based on a grouping technique of simultaneous metocean data. This technical specification should not be used for other regions of Santos Basin, because the oceanic flow conditions are distinct.



Figure 1 – Map of Northern Santos Basin fields, Brazil.

STATEMENT

PETROBRAS and the authors make no warranties, expressed or implied, as to any matter whatsoever, concerning the unappropriated use of this metocean document for any particular design purpose. PETROBRAS and the authors shall not be liable for any direct or indirect, consequential or non-consequential, or other damages and failures resulting from the unappropriated use of this metocean document.

2. ORIENTATION TO USE THE DOCUMENT

2.1 System of Units and Direction Convention

The International System of Units (S.I.), UNESCO-IOC (Intergovernmental Oceanographic Commission) and WMO (World Meteorological Organization) recommendations were adopted.

WIND and WAVES: direction indicates where the wind and waves comes from (origin at True North, clockwise sense).

CURRENT: direction indicates where the current goes to (origin at True North origin, clockwise sense).

Regarding the numeric values for cardinal directions: zero (0°) is associated with North direction, twenty two point five (22.5°) is associated with North-Northeast direction, forty five (45°) is associated with Northeast direction, sixty seven point five (67.5°) is associated with East-Northeast direction, ninety (90°) is associated with East direction, and so on, as used in a nautical chart compass rose (Figure 2 below).

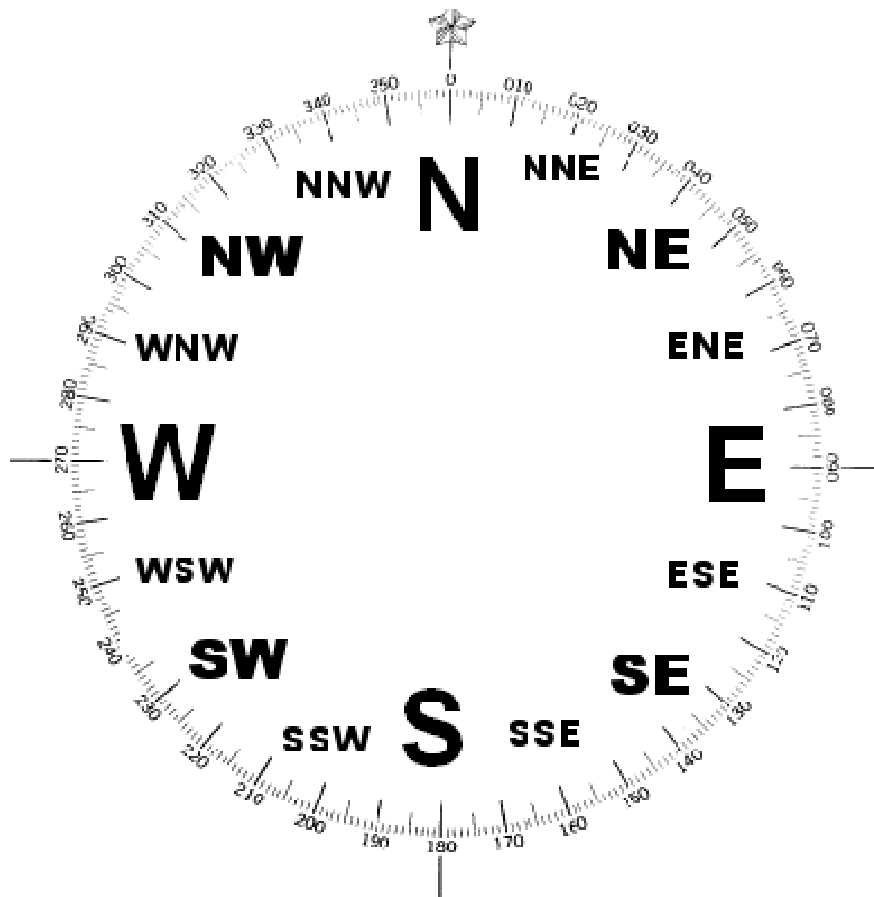


Figure 2 – Compass rose (numeric values associated with each direction)

2.2 Guidelines to Use the Ramp Up and Ramp Down Profiles

The *Ramp Up* and *Ramp Down* of extreme current profiles were provided to simulate the gradual change of oceanic conditions from the 1-year current profile to the N-year profile, based on local oceanographic knowledge of Santos Basin extreme currents.

The ramp time interval of six hours was chosen to represent the gradual change of oceanic conditions that is dominated by low-frequency extreme events that can last for days and weeks, associated with propagation of eddies and meanders through the region.

Tables of Section 3 always start with the 1-year extreme current profile that should last for six hours, and gradually ramp up to the 10-year (or 100-year) current profile with time steps of six hours. The 10-year (100-year) profile will last six hours, and gradually ramp down to the 1-year profiles with the same time step.

2.3 Vertical Interpolation of Extreme Current Profiles for Sites with Distinct Water Depths

It is very common that the extreme current profile data should be used for design on water depths lower or higher than 2200m (the last water level provided on tables of Section 3). It is recommended to use the following procedures to interpolate or extrapolate the current profile:

- a) the water depth is between two water levels prescribed on the extreme tables:
 - For example, consider that the local water depth is between prescribed levels 1800m and 2150 m. The velocity values should be linearly interpolated between the upper and lower levels to provide the velocity value at the desired water level;
 - Consider as the level to interpolate a value 10 meters above the local water depth. For instance, if the local water depth is 2100m, the velocity should be interpolated to 2090 m (=2100-10) using the velocity values of levels 1800m and 2150m;
 - Use a bottom boundary layer decay from the interpolated value 10 m above the soil to the local water depth. The bottom boundary log layer formulation is provided on design codes.
 - For the interpolated current direction, use the current direction of the closest prescribed water level. For example, if interpolating to 2100m, use the direction value provided to the 2150m level.
- b) the water depth is slightly higher than the last water level 2200m:
 - For example, consider that the local water depth is 2300m. The current values should be linearly interpolated considering that the prescribed value of 2200m is applied 10 meters above the local water depth. Thus, it vertically extends the current profile using the last prescribed value;
 - For the last 10 m above the soil, use a bottom boundary layer decay from the interpolated value 10 m above the soil to the local water depth. The bottom boundary log layer formulation is provided on design codes.
 - For the extrapolated current direction, use the current direction of the last prescribed water level. For example, if extrapolating to 2300m, use the direction value provided to the 2200m level

3. DURATION OF EXTREME CURRENT PROFILES

The northern Santos Basin fields are located at the upper border of São Paulo Plateau, where the oceanic flow is highly variable and sometimes affected by large scale eddies and meanders. The Brazil Current is mainly flowing southwestward (Figure 3.1) with its surface jet core between the isobath contours of 200 m and 1000 m, close to the upper continental slope, when sometimes it is observed strong westward currents. Under some perturbed conditions, mesoscale activity such as eddies and meanders can cause a southward displacement of the jet to a position further down the 2200 m isobath (Figure 6.2).

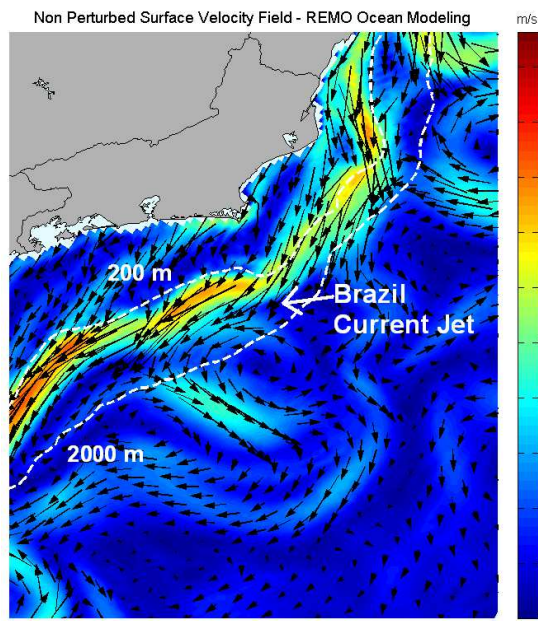


Figure 3.1 – Surface current field with the Brazil Current flowing into Santos Basin.

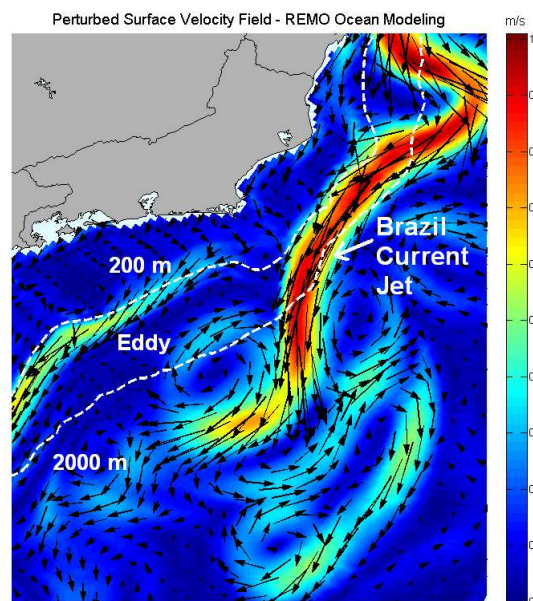


Figure 3.2 – Surface current field with a cyclonic eddy offshore

Source: Oceanographic Modeling and Observation Network (REMO)
 PETROBRAS research project PT-128.01.11660

3.1 Profiles of Extreme Current (m/s) at Surface

3.1.1 Ramp up from 1-Year to 10-year Current Profiles (m/s) With Surface N Direction

Profiles	1	2	3	4	5	6
Duration (Hours)	0-6	6-12	12-18	18-24	24-30	30-36
Depth (m)	1-year					10-year
50	0.79	0.83	0.87	0.92	0.96	1.00
100	0.71	0.75	0.80	0.84	0.89	0.93
150	0.53	0.57	0.62	0.66	0.71	0.75
200	0.51	0.54	0.57	0.59	0.62	0.65
250	0.44	0.46	0.49	0.51	0.54	0.56
300	0.41	0.43	0.45	0.48	0.50	0.52
350	0.37	0.39	0.41	0.43	0.45	0.47
800	0.20	0.23	0.26	0.28	0.31	0.34
1200	0.18	0.19	0.20	0.21	0.22	0.23
1600	0.18	0.19	0.21	0.22	0.24	0.25
1800	0.16	0.17	0.18	0.20	0.21	0.22
2150	0.19	0.20	0.21	0.22	0.23	0.24
2200	0.10	0.11	0.12	0.12	0.13	0.14
# of days ramp up:		1.50				

SOURCE: PETROBRAS Propriety Metocean Data

3.1.2 Ramp down from 10-Year to 1-year Current Profiles (m/s) With Surface N Direction

Profiles	6	7	8	9	10
Duration (Hours)	30-36	36-42	42-48	48-54	54-60
Depth (m)	10-year				1-year
50	1.00	0.95	0.90	0.84	0.79
100	0.93	0.88	0.82	0.77	0.71
150	0.75	0.70	0.64	0.59	0.53
200	0.65	0.62	0.58	0.55	0.51
250	0.56	0.53	0.50	0.47	0.44
300	0.52	0.49	0.47	0.44	0.41
350	0.47	0.45	0.42	0.40	0.37
800	0.34	0.31	0.27	0.24	0.20
1200	0.23	0.22	0.21	0.19	0.18
1600	0.25	0.23	0.22	0.20	0.18
1800	0.22	0.21	0.19	0.18	0.16
2150	0.24	0.23	0.22	0.20	0.19
2200	0.14	0.13	0.12	0.11	0.10
# of days ramp down:		1			

SOURCE: PETROBRAS Propriety Metocean Data



3.1.3 Ramp up from 1-Year to 100-year Current Profiles (m/s) With Surface N Direction

Profiles	1	2	3	4	5	6	7	8
Duration (Hours)	0-6	6-12	12-18	18-24	24-30	30-36	36-42	42-48
Depth (m)	1-year							100-year
50	0.79	0.85	0.90	0.96	1.01	1.07	1.12	1.18
100	0.71	0.77	0.82	0.88	0.93	0.99	1.04	1.10
150	0.53	0.59	0.64	0.70	0.75	0.81	0.86	0.92
200	0.51	0.55	0.58	0.62	0.65	0.69	0.72	0.76
250	0.44	0.47	0.50	0.53	0.57	0.60	0.63	0.66
300	0.41	0.44	0.47	0.50	0.52	0.55	0.58	0.61
350	0.37	0.40	0.42	0.45	0.47	0.50	0.52	0.55
800	0.20	0.24	0.27	0.31	0.35	0.39	0.42	0.46
1200	0.18	0.20	0.21	0.23	0.25	0.27	0.28	0.30
1600	0.18	0.20	0.22	0.24	0.25	0.27	0.29	0.31
1800	0.16	0.18	0.19	0.21	0.22	0.24	0.25	0.27
2150	0.19	0.20	0.21	0.22	0.24	0.25	0.26	0.27
2200	0.10	0.11	0.12	0.13	0.15	0.16	0.17	0.18
# of days ramp up:	2.00							

SOURCE: PETROBRAS Propriety Metocean Data

3.1.4 Ramp down from 100-Year to 1-year Current Profiles (m/s) With Surface N Direction

Profiles	8	9	10	11	12	13
Duration (Hours)	42-48	48-54	54-60	60-66	66-72	72-78
Depth (m)	100-year					1-year
50	1.18	1.10	1.02	0.95	0.87	0.79
100	1.10	1.02	0.94	0.87	0.79	0.71
150	0.92	0.84	0.76	0.69	0.61	0.53
200	0.76	0.71	0.66	0.61	0.56	0.51
250	0.66	0.62	0.57	0.53	0.48	0.44
300	0.61	0.57	0.53	0.49	0.45	0.41
350	0.55	0.51	0.48	0.44	0.41	0.37
800	0.46	0.41	0.36	0.30	0.25	0.20
1200	0.30	0.28	0.25	0.23	0.20	0.18
1600	0.31	0.28	0.26	0.23	0.21	0.18
1800	0.27	0.25	0.23	0.20	0.18	0.16
2150	0.27	0.25	0.24	0.22	0.21	0.19
2200	0.18	0.16	0.15	0.13	0.12	0.10
# of days ramp down:	1.25					

SOURCE: PETROBRAS Propriety Metocean Data

3.1.5 Ramp up from 1-Year to 10-year Current Profiles (m/s) With Surface NNE Direction

Profiles	1	2	3	4	5
Duration (Hours)	0-6	6-12	12-18	18-24	24-30
Depth (m)	1-year				10-year
50	0.60	0.64	0.67	0.71	0.74
100	0.60	0.64	0.67	0.71	0.74
150	0.54	0.58	0.62	0.66	0.70
200	0.49	0.52	0.55	0.57	0.60
250	0.43	0.46	0.48	0.51	0.53
300	0.39	0.41	0.44	0.46	0.48
350	0.36	0.38	0.40	0.42	0.44
800	0.22	0.25	0.28	0.31	0.34
1200	0.20	0.23	0.25	0.28	0.30
1600	0.18	0.20	0.22	0.24	0.26
1800	0.17	0.19	0.20	0.22	0.23
2150	0.15	0.16	0.18	0.19	0.20
2200	0.09	0.10	0.11	0.12	0.13
# of days ramp up:	1.25				

SOURCE: PETROBRAS Propriety Metocean Data

3.1.6 Ramp down from 10-Year to 1-year Current Profiles (m/s) With Surface NNE Direction

Profiles	5	6	7	8
Duration (Hours)	24-30	30-36	36-42	42-48
Depth (m)	10-year			1-year
50	0.74	0.69	0.65	0.60
100	0.74	0.69	0.65	0.60
150	0.70	0.65	0.59	0.54
200	0.60	0.56	0.53	0.49
250	0.53	0.50	0.46	0.43
300	0.48	0.45	0.42	0.39
350	0.44	0.41	0.39	0.36
800	0.34	0.30	0.26	0.22
1200	0.30	0.27	0.23	0.20
1600	0.26	0.23	0.21	0.18
1800	0.23	0.21	0.19	0.17
2150	0.20	0.18	0.17	0.15
2200	0.13	0.12	0.10	0.09
# of days ramp down:	0.75			

SOURCE: PETROBRAS Propriety Metocean Data

3.1.7 Ramp up from 1-Year to 100-year Current Profiles (m/s) With Surface NNE Direction

Profiles	1	2	3	4	5	6	7
Duration (Hours)	0-6	6-12	12-18	18-24	24-30	30-36	36-42
Depth (m)	1-year						100-year
50	0.60	0.64	0.69	0.73	0.77	0.82	0.86
100	0.60	0.64	0.69	0.73	0.77	0.82	0.86
150	0.54	0.59	0.63	0.68	0.72	0.77	0.81
200	0.49	0.53	0.56	0.60	0.63	0.67	0.70
250	0.43	0.46	0.49	0.53	0.56	0.59	0.62
300	0.39	0.42	0.45	0.48	0.50	0.53	0.56
350	0.36	0.39	0.41	0.44	0.47	0.49	0.52
800	0.22	0.25	0.29	0.32	0.35	0.39	0.42
1200	0.20	0.23	0.25	0.28	0.31	0.33	0.36
1600	0.18	0.20	0.22	0.25	0.27	0.29	0.31
1800	0.17	0.19	0.20	0.22	0.24	0.25	0.27
2150	0.15	0.16	0.18	0.19	0.20	0.22	0.23
2200	0.09	0.10	0.11	0.13	0.14	0.15	0.16
# of days ramp up:		1.75					

SOURCE: PETROBRAS Propriety Metocean Data

3.1.8 Ramp down from 100-Year to 1-year Current Profiles (m/s) With Surface NNE Direction

Profiles	7	8	9	10	11
Duration (Hours)	36-42	42-48	48-54	54-60	60-66
Depth (m)	100-year				1-year
50	0.86	0.80	0.73	0.67	0.60
100	0.86	0.80	0.73	0.67	0.60
150	0.81	0.74	0.68	0.61	0.54
200	0.70	0.65	0.60	0.54	0.49
250	0.62	0.57	0.53	0.48	0.43
300	0.56	0.52	0.48	0.43	0.39
350	0.52	0.48	0.44	0.40	0.36
800	0.42	0.37	0.32	0.27	0.22
1200	0.36	0.32	0.28	0.24	0.20
1600	0.31	0.28	0.25	0.21	0.18
1800	0.27	0.25	0.22	0.20	0.17
2150	0.23	0.21	0.19	0.17	0.15
2200	0.16	0.14	0.13	0.11	0.09
# of days ramp down:		1			

SOURCE: PETROBRAS Propriety Metocean Data

3.1.9 Ramp up from 1-Year to 10-year Current Profiles (m/s) With Surface NE Direction

Profiles	1	2	3
Duration (Hours)	0-6	6-12	12-18
Depth (m)	1-year		10-year
50	0.60	0.65	0.69
100	0.60	0.65	0.69
150	0.42	0.50	0.57
200	0.37	0.45	0.52
250	0.33	0.40	0.47
300	0.31	0.39	0.46
350	0.29	0.37	0.44
800	0.20	0.25	0.30
1200	0.17	0.21	0.24
1600	0.17	0.21	0.24
1800	0.16	0.19	0.21
2150	0.15	0.17	0.19
2200	0.08	0.10	0.11
# of days ramp up:		0.75	

SOURCE: PETROBRAS Propriety Metocean Data

3.1.10 Ramp down from 10-Year to 1-year Current Profiles (m/s) With Surface NE Direction

Profiles	3	4
Duration (Hours)	12-18	18-24
Depth (m)	10-year	1-year
50	0.69	0.60
100	0.69	0.60
150	0.57	0.42
200	0.52	0.37
250	0.47	0.33
300	0.46	0.31
350	0.44	0.29
800	0.30	0.20
1200	0.24	0.17
1600	0.24	0.17
1800	0.21	0.16
2150	0.19	0.15
2200	0.11	0.08
# of days ramp down:		0.25

SOURCE: PETROBRAS Propriety Metocean Data

3.1.11 Ramp up from 1-Year to 100-year Current Profiles (m/s) With Surface NE Direction

Profiles	1	2	3	4	5
Duration (Hours)	0-6	6-12	12-18	18-24	24-30
Depth (m)	1-year				100-year
50	0.60	0.65	0.70	0.74	0.79
100	0.60	0.65	0.70	0.74	0.79
150	0.42	0.49	0.55	0.62	0.68
200	0.37	0.43	0.50	0.56	0.62
250	0.33	0.39	0.45	0.51	0.57
300	0.31	0.37	0.44	0.50	0.56
350	0.29	0.35	0.42	0.48	0.54
800	0.20	0.25	0.29	0.34	0.38
1200	0.17	0.20	0.24	0.27	0.30
1600	0.17	0.20	0.23	0.25	0.28
1800	0.16	0.18	0.21	0.23	0.25
2150	0.15	0.17	0.19	0.20	0.22
2200	0.08	0.10	0.11	0.13	0.14
# of days ramp up:		1.25			

SOURCE: PETROBRAS Propriety Metocean Data

3.1.12 Ramp down from 100-Year to 1-year Current Profiles (m/s) With Surface NE Direction

Profiles	5	6	7
Duration (Hours)	24-30	30-36	36-42
Depth (m)	100-year		1-year
50	0.79	0.70	0.60
100	0.79	0.70	0.60
150	0.68	0.55	0.42
200	0.62	0.50	0.37
250	0.57	0.45	0.33
300	0.56	0.44	0.31
350	0.54	0.42	0.29
800	0.38	0.29	0.20
1200	0.30	0.24	0.17
1600	0.28	0.23	0.17
1800	0.25	0.21	0.16
2150	0.22	0.19	0.15
2200	0.14	0.11	0.08
# of days ramp down:		0.5	

SOURCE: PETROBRAS Propriety Metocean Data

3.1.13 Ramp up from 1-Year to 10-year Current Profiles (m/s) With Surface ENE Direction

Profiles	1	2	3	4
Duration (Hours)	0-6	6-12	12-18	18-24
Depth (m)	1-year			10-year
50	0.56	0.59	0.63	0.66
100	0.46	0.51	0.55	0.60
150	0.46	0.51	0.55	0.60
200	0.41	0.46	0.50	0.55
250	0.39	0.43	0.46	0.50
300	0.35	0.38	0.40	0.43
350	0.27	0.31	0.36	0.40
800	0.21	0.23	0.26	0.28
1200	0.20	0.21	0.22	0.23
1600	0.14	0.16	0.17	0.19
1800	0.13	0.14	0.16	0.17
2150	0.14	0.15	0.16	0.17
2200	0.08	0.09	0.09	0.10
# of days ramp up:	1.00			

SOURCE: PETROBRAS Propriety Metocean Data

3.1.14 Ramp down from 10-Year to 1-year Current Profiles (m/s) With Surface ENE Direction

Profiles	4	5	6
Duration (Hours)	18-24	24-30	30-36
Depth (m)	10-year		1-year
50	0.66	0.61	0.56
100	0.60	0.53	0.46
150	0.60	0.53	0.46
200	0.55	0.48	0.41
250	0.50	0.45	0.39
300	0.43	0.39	0.35
350	0.40	0.34	0.27
800	0.28	0.25	0.21
1200	0.23	0.22	0.20
1600	0.19	0.17	0.14
1800	0.17	0.15	0.13
2150	0.17	0.16	0.14
2200	0.10	0.09	0.08
# of days ramp down:	0.5		

SOURCE: PETROBRAS Propriety Metocean Data

3.1.15 Ramp up from 1-Year to 100-year Current Profiles (m/s) With Surface ENE Direction

Profiles	1	2	3	4	5
Duration (Hours)	0-6	6-12	12-18	18-24	24-30
Depth (m)	1-year				100-year
50	0.56	0.61	0.65	0.70	0.74
100	0.46	0.52	0.58	0.63	0.69
150	0.46	0.52	0.58	0.63	0.69
200	0.41	0.47	0.53	0.58	0.64
250	0.39	0.44	0.49	0.54	0.59
300	0.35	0.39	0.44	0.48	0.52
350	0.27	0.33	0.38	0.44	0.49
800	0.21	0.24	0.28	0.31	0.34
1200	0.20	0.22	0.23	0.25	0.26
1600	0.14	0.16	0.18	0.20	0.22
1800	0.13	0.15	0.17	0.18	0.20
2150	0.14	0.15	0.16	0.17	0.18
2200	0.08	0.09	0.10	0.10	0.11
# of days ramp up:		1.25			

SOURCE: PETROBRAS Propriety Metocean Data

3.1.16 Ramp down from 100-Year to 1-year Current Profiles (m/s) With Surface ENE Direction

Profiles	5	6	7	8
Duration (Hours)	24-30	30-36	36-42	42-48
Depth (m)	100-year			1-year
50	0.74	0.68	0.62	0.56
100	0.69	0.61	0.54	0.46
150	0.69	0.61	0.54	0.46
200	0.64	0.56	0.49	0.41
250	0.59	0.52	0.46	0.39
300	0.52	0.46	0.41	0.35
350	0.49	0.42	0.34	0.27
800	0.34	0.30	0.25	0.21
1200	0.26	0.24	0.22	0.20
1600	0.22	0.19	0.17	0.14
1800	0.20	0.18	0.15	0.13
2150	0.18	0.17	0.15	0.14
2200	0.11	0.10	0.09	0.08
# of days ramp down:		0.75		

SOURCE: PETROBRAS Propriety Metocean Data

3.1.17 Ramp up from 1-Year to 10-year Current Profiles (m/s) With Surface E Direction

Profiles	1	2	3	4
Duration (Hours)	0-6	6-12	12-18	18-24
Depth (m)	1-year			10-year
50	0.49	0.52	0.56	0.59
100	0.46	0.49	0.52	0.55
150	0.46	0.49	0.52	0.55
200	0.39	0.43	0.48	0.52
250	0.35	0.39	0.44	0.48
300	0.30	0.34	0.38	0.42
350	0.25	0.29	0.33	0.37
800	0.20	0.22	0.25	0.27
1200	0.17	0.18	0.20	0.21
1600	0.12	0.14	0.16	0.18
1800	0.12	0.14	0.15	0.17
2150	0.14	0.15	0.16	0.17
2200	0.09	0.09	0.10	0.10
# of days ramp up:	1.00			

SOURCE: PETROBRAS Propriety Metocean Data

3.1.18 Ramp down from 10-Year to 1-year Current Profiles (m/s) With Surface E Direction

Profiles	4	5	6	7
Duration (Hours)	18-24	24-30	30-36	36-42
Depth (m)	10-year			1-year
50	0.59	0.56	0.52	0.49
100	0.55	0.52	0.49	0.46
150	0.55	0.52	0.49	0.46
200	0.52	0.48	0.43	0.39
250	0.48	0.44	0.39	0.35
300	0.42	0.38	0.34	0.30
350	0.37	0.33	0.29	0.25
800	0.27	0.25	0.22	0.20
1200	0.21	0.20	0.18	0.17
1600	0.18	0.16	0.14	0.12
1800	0.17	0.15	0.14	0.12
2150	0.17	0.16	0.15	0.14
2200	0.10	0.10	0.09	0.09
# of days ramp down:	0.75			

SOURCE: PETROBRAS Propriety Metocean Data

3.1.19 Ramp up from 1-Year to 100-year Current Profiles (m/s) With Surface E Direction

Profiles	1	2	3	4	5
Duration (Hours)	0-6	6-12	12-18	18-24	24-30
Depth (m)	1-year				100-year
50	0.49	0.54	0.59	0.64	0.69
100	0.46	0.51	0.57	0.62	0.67
150	0.46	0.51	0.56	0.60	0.65
200	0.39	0.45	0.50	0.56	0.61
250	0.35	0.41	0.46	0.52	0.57
300	0.30	0.35	0.41	0.46	0.51
350	0.25	0.30	0.36	0.41	0.46
800	0.20	0.23	0.27	0.30	0.33
1200	0.17	0.19	0.21	0.23	0.25
1600	0.12	0.15	0.17	0.20	0.22
1800	0.12	0.14	0.16	0.18	0.20
2150	0.14	0.15	0.17	0.18	0.19
2200	0.09	0.10	0.11	0.11	0.12
# of days ramp up:		1.25			

SOURCE: PETROBRAS Propriety Metocean Data

3.1.20 Ramp down from 100-Year to 1-year Current Profiles (m/s) With Surface E Direction

Profiles	5	6	7	8	9
Duration (Hours)	24-30	30-36	36-42	42-48	48-54
Depth (m)	100-year				1-year
50	0.69	0.64	0.59	0.54	0.49
100	0.67	0.62	0.57	0.51	0.46
150	0.65	0.60	0.56	0.51	0.46
200	0.61	0.56	0.50	0.45	0.39
250	0.57	0.52	0.46	0.41	0.35
300	0.51	0.46	0.41	0.35	0.30
350	0.46	0.41	0.36	0.30	0.25
800	0.33	0.30	0.27	0.23	0.20
1200	0.25	0.23	0.21	0.19	0.17
1600	0.22	0.20	0.17	0.15	0.12
1800	0.20	0.18	0.16	0.14	0.12
2150	0.19	0.18	0.17	0.15	0.14
2200	0.12	0.11	0.11	0.10	0.09
# of days ramp down:		1			

SOURCE: PETROBRAS Propriety Metocean Data

3.1.21 Ramp up from 1-Year to 10-year Current Profiles (m/s) With Surface ESE Direction

Profiles	1	2	3	4	5	6
Duration (Hours)	0-6	6-12	12-18	18-24	24-30	30-36
Depth (m)	1-year					10-year
50	0.51	0.53	0.55	0.58	0.60	0.62
100	0.45	0.48	0.51	0.54	0.57	0.60
150	0.45	0.48	0.51	0.54	0.57	0.60
200	0.38	0.41	0.44	0.47	0.50	0.53
250	0.35	0.38	0.41	0.43	0.46	0.49
300	0.29	0.32	0.35	0.37	0.40	0.43
350	0.24	0.27	0.30	0.32	0.35	0.38
800	0.19	0.21	0.22	0.24	0.25	0.27
1200	0.16	0.17	0.18	0.19	0.20	0.21
1600	0.15	0.15	0.16	0.16	0.17	0.17
1800	0.15	0.15	0.15	0.16	0.16	0.16
2150	0.13	0.13	0.14	0.14	0.15	0.15
2200	0.08	0.08	0.08	0.09	0.09	0.09
# of days ramp up:	1.50					

SOURCE: PETROBRAS Propriety Metocean Data

3.1.22 Ramp down from 10-Year to 1-year Current Profiles (m/s) With Surface ESE Direction

Profiles	6	7	8	9
Duration (Hours)	30-36	36-42	42-48	48-54
Depth (m)	10-year			1-year
50	0.62	0.58	0.55	0.51
100	0.60	0.55	0.50	0.45
150	0.60	0.55	0.50	0.45
200	0.53	0.48	0.43	0.38
250	0.49	0.44	0.40	0.35
300	0.43	0.38	0.34	0.29
350	0.38	0.33	0.29	0.24
800	0.27	0.24	0.22	0.19
1200	0.21	0.19	0.18	0.16
1600	0.17	0.16	0.16	0.15
1800	0.16	0.16	0.15	0.15
2150	0.15	0.14	0.14	0.13
2200	0.09	0.09	0.08	0.08
# of days ramp down:	0.75			

SOURCE: PETROBRAS Propriety Metocean Data



3.1.23 Ramp up from 1-Year to 100-year Current Profiles (m/s) With Surface ESE Direction

Profiles	1	2	3	4	5	6	7	8
Duration (Hours)	0-6	6-12	12-18	18-24	24-30	30-36	36-42	42-48
Depth (m)	1-year							100-year
50	0.51	0.54	0.57	0.60	0.63	0.66	0.69	0.72
100	0.45	0.49	0.52	0.56	0.60	0.64	0.67	0.71
150	0.45	0.49	0.52	0.56	0.60	0.64	0.67	0.71
200	0.38	0.42	0.45	0.49	0.52	0.56	0.59	0.63
250	0.35	0.38	0.42	0.45	0.49	0.52	0.56	0.59
300	0.29	0.32	0.36	0.39	0.43	0.46	0.50	0.53
350	0.24	0.27	0.31	0.34	0.38	0.41	0.45	0.48
800	0.19	0.21	0.23	0.25	0.27	0.29	0.31	0.33
1200	0.16	0.17	0.19	0.20	0.21	0.22	0.24	0.25
1600	0.15	0.16	0.17	0.18	0.18	0.19	0.20	0.21
1800	0.15	0.16	0.16	0.17	0.18	0.19	0.19	0.20
2150	0.13	0.14	0.14	0.15	0.15	0.16	0.16	0.17
2200	0.08	0.08	0.09	0.09	0.09	0.09	0.10	0.10
# of days ramp up:	2.00							

SOURCE: PETROBRAS Propriety Metocean Data

3.1.24 Ramp down from 100-Year to 1-year Current Profiles (m/s) With Surface ESE Direction

Profiles	8	9	10	11	12
Duration (Hours)	42-48	48-54	54-60	60-66	66-72
Depth (m)	100-year				1-year
50	0.72	0.67	0.62	0.56	0.51
100	0.71	0.65	0.58	0.52	0.45
150	0.71	0.65	0.58	0.52	0.45
200	0.63	0.57	0.51	0.44	0.38
250	0.59	0.53	0.47	0.41	0.35
300	0.53	0.47	0.41	0.35	0.29
350	0.48	0.42	0.36	0.30	0.24
800	0.33	0.30	0.26	0.23	0.19
1200	0.25	0.23	0.21	0.18	0.16
1600	0.21	0.20	0.18	0.17	0.15
1800	0.20	0.19	0.18	0.16	0.15
2150	0.17	0.16	0.15	0.14	0.13
2200	0.10	0.10	0.09	0.09	0.08
# of days ramp down:	1				

SOURCE: PETROBRAS Propriety Metocean Data

3.1.25 Ramp up from 1-Year to 10-year Current Profiles (m/s) With Surface SE Direction

Profiles	1	2	3	4	5	6	7
Duration (Hours)	0-6	6-12	12-18	18-24	24-30	30-36	36-42
Depth (m)	1-year						10-year
50	0.61	0.63	0.65	0.68	0.70	0.72	0.74
100	0.59	0.61	0.63	0.66	0.68	0.70	0.72
150	0.52	0.55	0.57	0.60	0.63	0.65	0.68
200	0.47	0.50	0.52	0.55	0.57	0.60	0.62
250	0.43	0.46	0.48	0.51	0.53	0.56	0.58
300	0.38	0.41	0.43	0.46	0.48	0.51	0.53
350	0.35	0.38	0.40	0.43	0.45	0.48	0.50
800	0.24	0.26	0.28	0.30	0.31	0.33	0.35
1200	0.17	0.18	0.20	0.21	0.22	0.24	0.25
1600	0.16	0.17	0.18	0.19	0.19	0.20	0.21
1800	0.15	0.16	0.16	0.17	0.18	0.18	0.19
2150	0.14	0.15	0.15	0.16	0.16	0.17	0.17
2200	0.06	0.06	0.06	0.07	0.07	0.07	0.07
# of days ramp up:		1.75					

SOURCE: PETROBRAS Propriety Metocean Data

3.1.26 Ramp down from 10-Year to 1-year Current Profiles (m/s) With Surface SE Direction

Profiles	7	8	9
Duration (Hours)	36-42	42-48	48-54
Depth (m)	10-year		1-year
50	0.74	0.68	0.61
100	0.72	0.66	0.59
150	0.68	0.60	0.52
200	0.62	0.55	0.47
250	0.58	0.51	0.43
300	0.53	0.46	0.38
350	0.50	0.43	0.35
800	0.35	0.30	0.24
1200	0.25	0.21	0.17
1600	0.21	0.19	0.16
1800	0.19	0.17	0.15
2150	0.17	0.16	0.14
2200	0.07	0.07	0.06
# of days ramp down:		0.5	

SOURCE: PETROBRAS Propriety Metocean Data



3.1.27 Ramp up from 1-Year to 100-year Current Profiles (m/s) With Surface SE Direction

Profiles	1	2	3	4	5	6	7	8	9	10
Duration (Hours)	0-6	6-12	12-18	18-24	24-30	30-36	36-42	42-48	48-54	54-60
Depth (m)	1-year									100-year
50	0.61	0.64	0.66	0.69	0.72	0.74	0.77	0.80	0.82	0.85
100	0.59	0.62	0.65	0.67	0.70	0.73	0.76	0.78	0.81	0.84
150	0.52	0.55	0.58	0.61	0.64	0.67	0.70	0.73	0.76	0.79
200	0.47	0.50	0.53	0.56	0.59	0.61	0.64	0.67	0.70	0.73
250	0.43	0.46	0.49	0.52	0.55	0.57	0.60	0.63	0.66	0.69
300	0.38	0.41	0.44	0.47	0.50	0.52	0.55	0.58	0.61	0.64
350	0.35	0.38	0.41	0.43	0.46	0.49	0.52	0.54	0.57	0.60
800	0.24	0.26	0.28	0.30	0.32	0.34	0.36	0.38	0.40	0.42
1200	0.17	0.19	0.20	0.22	0.23	0.25	0.26	0.28	0.29	0.31
1600	0.16	0.17	0.18	0.19	0.20	0.21	0.22	0.23	0.24	0.25
1800	0.15	0.16	0.17	0.17	0.18	0.19	0.20	0.20	0.21	0.22
2150	0.14	0.15	0.15	0.16	0.16	0.17	0.17	0.18	0.18	0.19
2200	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.08	0.08	0.08
# of days ramp up:	2.50									

SOURCE: PETROBRAS Propriety Metocean Data

3.1.28 Ramp down from 100-Year to 1-year Current Profiles (m/s) With Surface SE Direction

Profiles	10	11	12	13	14
Duration (Hours)	54-60	60-66	66-72	72-78	78-84
Depth (m)	100-year				1-year
50	0.85	0.79	0.73	0.67	0.61
100	0.84	0.78	0.72	0.65	0.59
150	0.79	0.72	0.66	0.59	0.52
200	0.73	0.67	0.60	0.54	0.47
250	0.69	0.63	0.56	0.50	0.43
300	0.64	0.58	0.51	0.45	0.38
350	0.60	0.54	0.48	0.41	0.35
800	0.42	0.38	0.33	0.29	0.24
1200	0.31	0.28	0.24	0.21	0.17
1600	0.25	0.23	0.21	0.18	0.16
1800	0.22	0.20	0.19	0.17	0.15
2150	0.19	0.18	0.17	0.15	0.14
2200	0.08	0.08	0.07	0.07	0.06
# of days ramp down:	1				

SOURCE: PETROBRAS Propriety Metocean Data

3.1.29 Ramp up from 1-Year to 10-year Current Profiles (m/s) With Surface SSE Direction

Profiles	1	2	3	4	5	6	7	8
Duration (Hours)	0-6	6-12	12-18	18-24	24-30	30-36	36-42	42-48
Depth (m)	1-year							10-year
50	0.70	0.71	0.73	0.74	0.76	0.77	0.79	0.80
100	0.64	0.66	0.67	0.69	0.70	0.72	0.73	0.75
150	0.59	0.61	0.62	0.64	0.66	0.68	0.69	0.71
200	0.52	0.54	0.55	0.57	0.59	0.61	0.62	0.64
250	0.46	0.48	0.49	0.51	0.52	0.54	0.55	0.57
300	0.42	0.44	0.45	0.47	0.48	0.50	0.51	0.53
350	0.39	0.41	0.42	0.44	0.45	0.47	0.48	0.50
800	0.28	0.29	0.30	0.31	0.33	0.34	0.35	0.36
1200	0.19	0.20	0.21	0.22	0.22	0.23	0.24	0.25
1600	0.16	0.17	0.17	0.18	0.18	0.19	0.19	0.20
1800	0.14	0.15	0.15	0.16	0.16	0.17	0.17	0.18
2150	0.13	0.13	0.14	0.14	0.15	0.15	0.16	0.16
2200	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07
# of days ramp up:	2.00							

SOURCE: PETROBRAS Propriety Metocean Data

3.1.30 Ramp down from 10-Year to 1-year Current Profiles (m/s) With Surface SSE Direction

Profiles	8	9	10	11	12
Duration (Hours)	42-48	48-54	54-60	60-66	66-72
Depth (m)	10-year				1-year
50	0.80	0.78	0.75	0.73	0.70
100	0.75	0.72	0.70	0.67	0.64
150	0.71	0.68	0.65	0.62	0.59
200	0.64	0.61	0.58	0.55	0.52
250	0.57	0.54	0.52	0.49	0.46
300	0.53	0.50	0.48	0.45	0.42
350	0.50	0.47	0.45	0.42	0.39
800	0.36	0.34	0.32	0.30	0.28
1200	0.25	0.24	0.22	0.21	0.19
1600	0.20	0.19	0.18	0.17	0.16
1800	0.18	0.17	0.16	0.15	0.14
2150	0.16	0.15	0.15	0.14	0.13
2200	0.07	0.07	0.07	0.06	0.06
# of days ramp down:	1				

SOURCE: PETROBRAS Propriety Metocean Data



3.1.31 Ramp up from 1-Year to 100-year Current Profiles (m/s) With Surface SSE Direction

Profiles	1	2	3	4	5	6	7	8	9	10	11	12
Duration (Hours)	0-6	6-12	12-18	18-24	24-30	30-36	36-42	42-48	48-54	54-60	60-66	66-72
Depth (m)	1-year											100-year
50	0.70	0.72	0.73	0.75	0.77	0.78	0.80	0.81	0.83	0.85	0.86	0.88
100	0.64	0.66	0.67	0.69	0.71	0.73	0.74	0.76	0.78	0.80	0.81	0.83
150	0.59	0.61	0.63	0.65	0.67	0.69	0.71	0.73	0.75	0.77	0.79	0.81
200	0.52	0.54	0.56	0.57	0.59	0.61	0.63	0.65	0.67	0.68	0.70	0.72
250	0.46	0.48	0.50	0.51	0.53	0.55	0.57	0.59	0.61	0.62	0.64	0.66
300	0.42	0.44	0.45	0.47	0.49	0.51	0.52	0.54	0.56	0.58	0.59	0.61
350	0.39	0.41	0.42	0.44	0.46	0.48	0.49	0.51	0.53	0.55	0.56	0.58
800	0.28	0.29	0.31	0.32	0.33	0.34	0.36	0.37	0.38	0.39	0.41	0.42
1200	0.19	0.20	0.21	0.22	0.23	0.24	0.25	0.26	0.27	0.28	0.29	0.30
1600	0.16	0.17	0.17	0.18	0.19	0.19	0.20	0.20	0.21	0.22	0.22	0.23
1800	0.14	0.15	0.15	0.16	0.16	0.17	0.17	0.18	0.18	0.19	0.19	0.20
2150	0.13	0.13	0.14	0.14	0.15	0.15	0.16	0.16	0.17	0.17	0.18	0.18
2200	0.06	0.06	0.07	0.07	0.07	0.07	0.08	0.08	0.08	0.08	0.09	0.09
# of days ramp up:	3.00											

SOURCE: PETROBRAS Propriety Metocean Data

3.1.32 Ramp down from 100-Year to 1-year Current Profiles (m/s) With Surface SSE Direction

Profiles	12	13	14	15	16	17	18
Duration (Hours)	66-72	72-78	78-84	84-90	90-96	96-102	102-108
Depth (m)	100-year						1-year
50	0.88	0.85	0.82	0.79	0.76	0.73	0.70
100	0.83	0.80	0.77	0.74	0.70	0.67	0.64
150	0.81	0.77	0.74	0.70	0.66	0.63	0.59
200	0.72	0.69	0.65	0.62	0.59	0.55	0.52
250	0.66	0.63	0.59	0.56	0.53	0.49	0.46
300	0.61	0.58	0.55	0.52	0.48	0.45	0.42
350	0.58	0.55	0.52	0.49	0.45	0.42	0.39
800	0.42	0.40	0.37	0.35	0.33	0.30	0.28
1200	0.30	0.28	0.26	0.25	0.23	0.21	0.19
1600	0.23	0.22	0.21	0.20	0.18	0.17	0.16
1800	0.20	0.19	0.18	0.17	0.16	0.15	0.14
2150	0.18	0.17	0.16	0.16	0.15	0.14	0.13
2200	0.09	0.09	0.08	0.08	0.07	0.07	0.06
# of days ramp down:	1.5						

SOURCE: PETROBRAS Propriety Metocean Data



TECHNICAL REPORT

No.: **I-RL-3A00.00-1000-941-PPC-001 rev.A**

Project: **SANTOS BASIN NORTHERN PRE-SALT FIELDS**

Sheet: **23 of 89**

Title: **DURATION OF EXTREME CURRENT PROFILES AND CLUSTERS OF SIMULTANEOUS METOCEAN CONDITIONS**

3.1.33 Ramp up from 1-Year to 10-year Current Profiles (m/s) With Surface S Direction

Profiles	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Duration (Hours)	0-6	6-12	12-18	18-24	24-30	30-36	36-42	42-48	48-54	54-60	60-66	66-72	72-78	78-84	84-90	90-96
Depth (m)	1-year															10-year
50	0.82	0.83	0.85	0.86	0.87	0.89	0.90	0.91	0.93	0.94	0.95	0.97	0.98	0.99	1.01	1.02
100	0.74	0.75	0.77	0.78	0.79	0.80	0.82	0.83	0.84	0.85	0.87	0.88	0.89	0.90	0.92	0.93
150	0.74	0.75	0.77	0.78	0.79	0.80	0.82	0.83	0.84	0.85	0.87	0.88	0.89	0.90	0.92	0.93
200	0.67	0.68	0.70	0.71	0.72	0.73	0.75	0.76	0.77	0.78	0.80	0.81	0.82	0.83	0.85	0.86
250	0.63	0.64	0.65	0.67	0.68	0.69	0.70	0.71	0.73	0.74	0.75	0.76	0.77	0.79	0.80	0.81
300	0.53	0.54	0.56	0.57	0.58	0.59	0.61	0.62	0.63	0.64	0.66	0.67	0.68	0.69	0.71	0.72
350	0.46	0.47	0.48	0.50	0.51	0.52	0.53	0.54	0.56	0.57	0.58	0.59	0.60	0.62	0.63	0.64
800	0.23	0.24	0.25	0.25	0.26	0.27	0.28	0.29	0.29	0.30	0.31	0.32	0.33	0.33	0.34	0.35
1200	0.16	0.16	0.17	0.17	0.18	0.18	0.19	0.19	0.20	0.20	0.21	0.21	0.22	0.22	0.23	0.23
1600	0.18	0.18	0.19	0.19	0.19	0.20	0.20	0.20	0.21	0.21	0.21	0.22	0.22	0.22	0.23	0.23
1800	0.13	0.13	0.14	0.14	0.14	0.15	0.15	0.15	0.16	0.16	0.16	0.17	0.17	0.17	0.18	0.18
2150	0.13	0.13	0.14	0.14	0.14	0.15	0.15	0.15	0.16	0.16	0.16	0.17	0.17	0.17	0.18	0.18
2200	0.07	0.07	0.07	0.08	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.09	0.10	0.10	0.10
# of days ramp up:	4.00															

SOURCE: PETROBRAS Propriety Metocean Data

3.1.34 Ramp down from 10-Year to 1-year Current Profiles (m/s) With Surface S Direction

Profiles	16	17	18	19	20	21	22	23	24	25
Duration (Hours)	90-96	96-102	102-108	108-114	114-120	120-126	126-132	132-138	138-144	144-150
Depth (m)	10-year									1-year
50	1.02	1.00	0.98	0.95	0.93	0.91	0.89	0.86	0.84	0.82
100	0.93	0.91	0.89	0.87	0.85	0.82	0.80	0.78	0.76	0.74
150	0.93	0.91	0.89	0.87	0.85	0.82	0.80	0.78	0.76	0.74
200	0.86	0.84	0.82	0.80	0.78	0.75	0.73	0.71	0.69	0.67
250	0.81	0.79	0.77	0.75	0.73	0.71	0.69	0.67	0.65	0.63
300	0.72	0.70	0.68	0.66	0.64	0.61	0.59	0.57	0.55	0.53
350	0.64	0.62	0.60	0.58	0.56	0.54	0.52	0.50	0.48	0.46
800	0.35	0.34	0.32	0.31	0.30	0.28	0.27	0.26	0.24	0.23
1200	0.23	0.22	0.21	0.21	0.20	0.19	0.18	0.18	0.17	0.16
1600	0.23	0.22	0.22	0.21	0.21	0.20	0.20	0.19	0.19	0.18
1800	0.18	0.17	0.17	0.16	0.16	0.15	0.15	0.14	0.14	0.13
2150	0.18	0.17	0.17	0.16	0.16	0.15	0.15	0.14	0.14	0.13
2200	0.10	0.10	0.09	0.09	0.09	0.08	0.08	0.08	0.07	0.07
# of days ramp down:	2.25									

SOURCE: PETROBRAS Propriety Metocean Data



3.1.35 Ramp up from 1-Year to 100-year Current Profiles (m/s) With Surface S Direction

Profiles	1	2	3	4	5	6	7	8	9	10	11
Duration (Hours)	0-6	6-12	12-18	18-24	24-30	30-36	36-42	42-48	48-54	54-60	60-66
Depth (m)	1-year										
50	0.82	0.84	0.85	0.87	0.88	0.90	0.92	0.93	0.95	0.97	0.98
100	0.74	0.76	0.77	0.79	0.80	0.82	0.83	0.85	0.87	0.88	0.90
150	0.74	0.76	0.77	0.79	0.80	0.82	0.83	0.85	0.87	0.88	0.90
200	0.67	0.69	0.70	0.72	0.73	0.75	0.76	0.78	0.79	0.81	0.82
250	0.63	0.64	0.66	0.67	0.69	0.70	0.72	0.73	0.75	0.76	0.78
300	0.53	0.54	0.56	0.57	0.59	0.60	0.62	0.63	0.65	0.66	0.68
350	0.46	0.47	0.49	0.50	0.52	0.53	0.55	0.56	0.58	0.59	0.61
800	0.23	0.24	0.25	0.26	0.27	0.28	0.29	0.30	0.31	0.32	0.33
1200	0.16	0.17	0.17	0.18	0.18	0.19	0.20	0.20	0.21	0.22	0.22
1600	0.18	0.18	0.19	0.19	0.20	0.20	0.20	0.21	0.21	0.21	0.22
1800	0.13	0.13	0.14	0.14	0.15	0.15	0.16	0.16	0.16	0.17	0.17
2150	0.13	0.13	0.14	0.14	0.15	0.15	0.16	0.16	0.16	0.17	0.17
2200	0.07	0.07	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.10	0.10
# of days ramp up:	5.50										

Profiles	12	13	14	15	16	17	18	19	20	21	22
Duration (Hours)	66-72	72-78	78-84	84-90	90-96	96-102	102-108	108-114	114-120	120-126	126-132
Depth (m)											100-year
50	1.00	1.01	1.03	1.05	1.06	1.08	1.10	1.11	1.13	1.14	1.16
100	0.91	0.93	0.94	0.96	0.98	0.99	1.01	1.02	1.04	1.05	1.07
150	0.91	0.93	0.94	0.96	0.98	0.99	1.01	1.02	1.04	1.05	1.07
200	0.84	0.85	0.87	0.88	0.90	0.91	0.93	0.94	0.96	0.97	0.99
250	0.79	0.81	0.82	0.84	0.85	0.87	0.88	0.90	0.91	0.93	0.94
300	0.69	0.71	0.72	0.74	0.75	0.77	0.78	0.80	0.81	0.83	0.84
350	0.62	0.64	0.65	0.67	0.68	0.70	0.71	0.73	0.74	0.76	0.77
800	0.33	0.34	0.35	0.36	0.37	0.38	0.39	0.40	0.41	0.42	0.43
1200	0.23	0.23	0.24	0.25	0.25	0.26	0.27	0.27	0.28	0.28	0.29
1600	0.22	0.23	0.23	0.23	0.24	0.24	0.24	0.25	0.25	0.26	0.26
1800	0.18	0.18	0.19	0.19	0.19	0.20	0.20	0.21	0.21	0.22	0.22
2150	0.18	0.18	0.19	0.19	0.19	0.20	0.20	0.21	0.21	0.22	0.22
2200	0.10	0.10	0.11	0.11	0.11	0.12	0.12	0.12	0.12	0.13	0.13

SOURCE: PETROBRAS Propriety Metocean Data



3.1.36 Ramp down from 100-Year to 1-year Current Profiles (m/s) With Surface S Direction

Profiles	22	23	24	25	26	27	28
Duration (Hours)	126-132	132-138	138-144	144-150	150-156	156-162	162-168
Depth (m)	100-year						
50	1.16	1.13	1.11	1.08	1.06	1.03	1.00
100	1.07	1.04	1.02	0.99	0.97	0.94	0.92
150	1.07	1.04	1.02	0.99	0.97	0.94	0.92
200	0.99	0.97	0.94	0.92	0.89	0.87	0.84
250	0.94	0.92	0.89	0.87	0.84	0.82	0.80
300	0.84	0.82	0.79	0.77	0.74	0.72	0.70
350	0.77	0.75	0.72	0.70	0.67	0.65	0.63
800	0.43	0.41	0.40	0.38	0.37	0.35	0.34
1200	0.29	0.28	0.27	0.26	0.25	0.24	0.23
1600	0.26	0.25	0.25	0.24	0.24	0.23	0.22
1800	0.22	0.21	0.21	0.20	0.19	0.19	0.18
2150	0.22	0.21	0.21	0.20	0.19	0.19	0.18
2200	0.13	0.13	0.12	0.12	0.11	0.11	0.10
# of days ramp down:	3.25						

Profiles	29	30	31	32	33	34	35
Duration (Hours)	168-174	174-180	180-186	186-192	192-198	198-204	204-210
Depth (m)							1-year
50	0.98	0.95	0.92	0.90	0.87	0.85	0.82
100	0.89	0.87	0.84	0.82	0.79	0.77	0.74
150	0.89	0.87	0.84	0.82	0.79	0.77	0.74
200	0.82	0.79	0.77	0.74	0.72	0.69	0.67
250	0.77	0.75	0.73	0.70	0.68	0.65	0.63
300	0.67	0.65	0.63	0.60	0.58	0.55	0.53
350	0.60	0.58	0.56	0.53	0.51	0.48	0.46
800	0.32	0.31	0.29	0.28	0.26	0.25	0.23
1200	0.22	0.21	0.20	0.19	0.18	0.17	0.16
1600	0.22	0.21	0.20	0.20	0.19	0.19	0.18
1800	0.17	0.16	0.16	0.15	0.14	0.14	0.13
2150	0.17	0.16	0.16	0.15	0.14	0.14	0.13
2200	0.10	0.09	0.09	0.08	0.08	0.07	0.07

SOURCE: PETROBRAS Propriety Metocean Data



3.1.37 Ramp up from 1-Year to 10-year Current Profiles (m/s) With Surface SSW Direction

Profiles	1	2	3	4	5	6	7	8
Duration (Hours)	0-6	6-12	12-18	18-24	24-30	30-36	36-42	42-48
Depth (m)	1-year							
50	1.01	1.02	1.04	1.05	1.07	1.08	1.10	1.11
100	0.93	0.95	0.97	0.98	1.00	1.02	1.04	1.06
150	0.92	0.94	0.95	0.97	0.99	1.01	1.02	1.04
200	0.72	0.74	0.75	0.77	0.79	0.81	0.82	0.84
250	0.64	0.66	0.67	0.69	0.71	0.72	0.74	0.76
300	0.57	0.59	0.60	0.62	0.63	0.65	0.66	0.68
350	0.51	0.53	0.54	0.56	0.58	0.59	0.61	0.63
800	0.21	0.22	0.23	0.24	0.25	0.26	0.27	0.29
1200	0.19	0.20	0.20	0.21	0.22	0.22	0.23	0.24
1600	0.19	0.19	0.20	0.20	0.20	0.20	0.21	0.21
1800	0.11	0.11	0.12	0.12	0.13	0.13	0.14	0.14
2150	0.14	0.15	0.15	0.16	0.16	0.17	0.17	0.18
2200	0.06	0.06	0.07	0.07	0.08	0.08	0.09	0.09
# of days ramp up:		3.75						

Profiles	9	10	11	12	13	14	15
Duration (Hours)	48-54	54-60	60-66	66-72	72-78	78-84	84-90
Depth (m)							10-year
50	1.12	1.14	1.15	1.17	1.18	1.20	1.21
100	1.07	1.09	1.11	1.13	1.14	1.16	1.18
150	1.06	1.07	1.09	1.11	1.13	1.14	1.16
200	0.86	0.87	0.89	0.91	0.93	0.94	0.96
250	0.77	0.79	0.80	0.82	0.84	0.85	0.87
300	0.70	0.71	0.73	0.74	0.76	0.77	0.79
350	0.64	0.66	0.67	0.69	0.71	0.72	0.74
800	0.30	0.31	0.32	0.33	0.34	0.35	0.36
1200	0.24	0.25	0.25	0.26	0.27	0.27	0.28
1600	0.21	0.22	0.22	0.22	0.22	0.23	0.23
1800	0.14	0.15	0.15	0.16	0.16	0.17	0.17
2150	0.18	0.19	0.19	0.20	0.20	0.21	0.21
2200	0.09	0.10	0.10	0.11	0.11	0.12	0.12

SOURCE: PETROBRAS Propriety Metocean Data



TECHNICAL REPORT

No.: **I-RL-3A00.00-1000-941-PPC-001 rev.A**

Project: **SANTOS BASIN NORTHERN PRE-SALT FIELDS**

Sheet: **27 of 89**

Title: **DURATION OF EXTREME CURRENT PROFILES AND CLUSTERS OF SIMULTANEOUS METOCEAN CONDITIONS**

3.1.38 Ramp down from 10-Year to 1-year Current Profiles (m/s) With Surface SSW Direction

Profiles	15	16	17	18	19	20	21	22	23	24	25
Duration (Hours)	84-90	90-96	96-102	102-108	108-114	114-120	120-126	126-132	132-138	138-144	144-150
Depth (m)	10-year										1-year
50	1.21	1.19	1.17	1.15	1.13	1.11	1.09	1.07	1.05	1.03	1.01
100	1.18	1.16	1.13	1.11	1.08	1.06	1.03	1.01	0.98	0.96	0.93
150	1.16	1.14	1.11	1.09	1.06	1.04	1.02	0.99	0.97	0.94	0.92
200	0.96	0.94	0.91	0.89	0.86	0.84	0.82	0.79	0.77	0.74	0.72
250	0.87	0.85	0.82	0.80	0.78	0.76	0.73	0.71	0.69	0.66	0.64
300	0.79	0.77	0.75	0.72	0.70	0.68	0.66	0.64	0.61	0.59	0.57
350	0.74	0.72	0.69	0.67	0.65	0.63	0.60	0.58	0.56	0.53	0.51
800	0.36	0.35	0.33	0.32	0.30	0.29	0.27	0.26	0.24	0.23	0.21
1200	0.28	0.27	0.26	0.25	0.24	0.24	0.23	0.22	0.21	0.20	0.19
1600	0.23	0.23	0.22	0.22	0.21	0.21	0.21	0.20	0.20	0.19	0.19
1800	0.17	0.16	0.16	0.15	0.15	0.14	0.13	0.13	0.12	0.12	0.11
2150	0.21	0.20	0.20	0.19	0.18	0.18	0.17	0.16	0.15	0.15	0.14
2200	0.12	0.11	0.11	0.10	0.10	0.09	0.08	0.08	0.07	0.07	0.06

of days ramp down: 2.5

SOURCE: PETROBRAS Propriety Metocean Data



TECHNICAL REPORT

No.: **I-RL-3A00.00-1000-941-PPC-001 rev.A**

Project: **SANTOS BASIN NORTHERN PRE-SALT FIELDS**

Sheet: **28 of 89**

Title: **DURATION OF EXTREME CURRENT PROFILES AND CLUSTERS OF SIMULTANEOUS METOCEAN CONDITIONS**

3.1.39 Ramp up from 1-Year to 100-year Current Profiles (m/s) With Surface SSW Direction

Profiles	1	2	3	4	5	6	7	8	9	10	11	12	13
Duration (Hours)	0-6	6-12	12-18	18-24	24-30	30-36	36-42	42-48	48-54	54-60	60-66	66-72	72-78
Depth (m)	1-year												
50	1.01	1.03	1.05	1.07	1.09	1.11	1.13	1.15	1.17	1.19	1.21	1.23	1.25
100	0.93	0.95	0.96	0.98	1.00	1.02	1.03	1.05	1.07	1.08	1.10	1.12	1.14
150	0.92	0.94	0.95	0.97	0.99	1.00	1.02	1.04	1.05	1.07	1.09	1.10	1.12
200	0.72	0.74	0.75	0.77	0.79	0.80	0.82	0.83	0.85	0.87	0.88	0.90	0.92
250	0.64	0.66	0.67	0.69	0.70	0.72	0.74	0.75	0.77	0.78	0.80	0.82	0.83
300	0.57	0.59	0.60	0.62	0.63	0.65	0.66	0.68	0.69	0.71	0.73	0.74	0.76
350	0.51	0.53	0.54	0.56	0.57	0.59	0.60	0.62	0.63	0.65	0.67	0.68	0.70
800	0.21	0.22	0.23	0.24	0.25	0.26	0.27	0.28	0.29	0.30	0.31	0.32	0.33
1200	0.19	0.20	0.20	0.21	0.22	0.22	0.23	0.23	0.24	0.25	0.25	0.26	0.27
1600	0.19	0.19	0.20	0.20	0.20	0.21	0.21	0.21	0.22	0.22	0.22	0.23	0.23
1800	0.11	0.11	0.12	0.12	0.13	0.13	0.13	0.14	0.14	0.15	0.15	0.15	0.16
2150	0.14	0.14	0.15	0.15	0.16	0.16	0.17	0.17	0.18	0.18	0.19	0.19	0.20
2200	0.06	0.06	0.07	0.07	0.08	0.08	0.08	0.09	0.09	0.10	0.10	0.10	0.11
# of days ramp up:	6.50												

Profiles	14	15	16	17	18	19	20	21	22	23	24	25	26
Duration (Hours)	78-84	84-90	90-96	96-102	102-108	108-114	114-120	120-126	126-132	132-138	138-144	144-150	150-156
Depth (m)													100-year
50	1.26	1.28	1.30	1.32	1.34	1.36	1.38	1.40	1.42	1.44	1.46	1.48	1.50
100	1.15	1.17	1.19	1.21	1.22	1.24	1.26	1.27	1.29	1.31	1.33	1.34	1.36
150	1.14	1.16	1.17	1.19	1.21	1.22	1.24	1.26	1.27	1.29	1.31	1.32	1.34
200	0.93	0.95	0.97	0.98	1.00	1.02	1.03	1.05	1.06	1.08	1.10	1.11	1.13
250	0.85	0.86	0.88	0.90	0.91	0.93	0.94	0.96	0.98	0.99	1.01	1.02	1.04
300	0.77	0.79	0.80	0.82	0.84	0.85	0.87	0.88	0.90	0.91	0.93	0.94	0.96
350	0.71	0.73	0.74	0.76	0.78	0.79	0.81	0.82	0.84	0.85	0.87	0.88	0.90
800	0.35	0.36	0.37	0.38	0.39	0.40	0.41	0.42	0.43	0.44	0.45	0.46	0.47
1200	0.27	0.28	0.29	0.29	0.30	0.31	0.31	0.32	0.32	0.33	0.34	0.34	0.35
1600	0.23	0.23	0.24	0.24	0.24	0.25	0.25	0.25	0.26	0.26	0.26	0.27	0.27
1800	0.16	0.17	0.17	0.17	0.18	0.18	0.19	0.19	0.19	0.20	0.20	0.21	0.21
2150	0.20	0.21	0.21	0.22	0.22	0.23	0.23	0.24	0.24	0.25	0.25	0.26	0.26
2200	0.11	0.12	0.12	0.12	0.13	0.13	0.14	0.14	0.14	0.15	0.15	0.16	0.16

SOURCE: PETROBRAS Propriety Metocean Data



TECHNICAL REPORT

No.: **I-RL-3A00.00-1000-941-PPC-001 rev.A**

Project: **SANTOS BASIN NORTHERN PRE-SALT FIELDS**

Sheet: **29 of 89**

Title: **DURATION OF EXTREME CURRENT PROFILES AND CLUSTERS OF SIMULTANEOUS METOCEAN CONDITIONS**

3.1.40 Ramp down from 100-Year to 1-year Current Profiles (m/s) With Surface SSW Direction

Profiles	26	27	28	29	30	31	32	33	34	35
Duration (Hours)	150-156	156-162	162-168	168-174	174-180	180-186	186-192	192-198	198-204	204-210
Depth (m)	100-year									
50	1.50	1.47	1.45	1.42	1.39	1.36	1.34	1.31	1.28	1.26
100	1.36	1.34	1.31	1.29	1.26	1.24	1.22	1.19	1.17	1.15
150	1.34	1.32	1.29	1.27	1.25	1.22	1.20	1.18	1.15	1.13
200	1.13	1.11	1.08	1.06	1.04	1.02	0.99	0.97	0.95	0.93
250	1.04	1.02	1.00	0.97	0.95	0.93	0.91	0.88	0.86	0.84
300	0.96	0.94	0.92	0.90	0.87	0.85	0.83	0.81	0.79	0.76
350	0.90	0.88	0.86	0.84	0.81	0.79	0.77	0.75	0.73	0.71
800	0.47	0.46	0.44	0.43	0.41	0.40	0.38	0.37	0.35	0.34
1200	0.35	0.34	0.33	0.32	0.31	0.31	0.30	0.29	0.28	0.27
1600	0.27	0.27	0.26	0.26	0.25	0.25	0.24	0.24	0.23	0.23
1800	0.21	0.20	0.20	0.19	0.19	0.18	0.18	0.17	0.17	0.16
2150	0.26	0.25	0.25	0.24	0.23	0.23	0.22	0.21	0.21	0.20
2200	0.16	0.15	0.15	0.14	0.14	0.13	0.13	0.12	0.12	0.11
# of days ramp down:	4.5									

Profiles	36	37	38	39	40	41	42	43	44
Duration (Hours)	210-216	216-222	222-228	228-234	234-240	240-246	246-252	252-258	258-264
Depth (m)									1-year
50	1.23	1.20	1.17	1.15	1.12	1.09	1.06	1.04	1.01
100	1.12	1.10	1.07	1.05	1.03	1.00	0.98	0.95	0.93
150	1.11	1.08	1.06	1.04	1.01	0.99	0.97	0.94	0.92
200	0.90	0.88	0.86	0.83	0.81	0.79	0.77	0.74	0.72
250	0.82	0.80	0.77	0.75	0.73	0.71	0.68	0.66	0.64
300	0.74	0.72	0.70	0.68	0.66	0.63	0.61	0.59	0.57
350	0.68	0.66	0.64	0.62	0.60	0.57	0.55	0.53	0.51
800	0.33	0.31	0.30	0.28	0.27	0.25	0.24	0.22	0.21
1200	0.26	0.25	0.24	0.23	0.23	0.22	0.21	0.20	0.19
1600	0.23	0.22	0.22	0.21	0.21	0.20	0.20	0.19	0.19
1800	0.15	0.15	0.14	0.14	0.13	0.13	0.12	0.12	0.11
2150	0.19	0.19	0.18	0.17	0.17	0.16	0.15	0.15	0.14
2200	0.10	0.10	0.09	0.09	0.08	0.08	0.07	0.07	0.06

SOURCE: PETROBRAS Propriety Metocean Data



3.1.41 Ramp up from 1-Year to 10-year Current Profiles (m/s) With Surface SW Direction

Profiles	1	2	3	4	5	6	7	8	9	10
Duration (Hours)	0-6	6-12	12-18	18-24	24-30	30-36	36-42	42-48	48-54	54-60
Depth (m)	1-year									
50	1.24	1.26	1.28	1.29	1.31	1.33	1.35	1.36	1.38	1.40
100	1.17	1.19	1.21	1.23	1.24	1.26	1.28	1.30	1.32	1.34
150	1.04	1.06	1.08	1.10	1.11	1.13	1.15	1.17	1.19	1.21
200	0.97	0.99	1.01	1.02	1.04	1.06	1.08	1.09	1.11	1.13
250	0.81	0.83	0.85	0.86	0.88	0.90	0.92	0.93	0.95	0.97
300	0.74	0.76	0.77	0.79	0.81	0.83	0.84	0.86	0.88	0.90
350	0.67	0.69	0.70	0.72	0.74	0.76	0.77	0.79	0.81	0.83
800	0.32	0.33	0.34	0.36	0.37	0.38	0.39	0.40	0.41	0.43
1200	0.19	0.20	0.21	0.22	0.22	0.23	0.24	0.25	0.26	0.27
1600	0.12	0.13	0.13	0.14	0.14	0.15	0.15	0.16	0.16	0.17
1800	0.15	0.15	0.15	0.16	0.16	0.16	0.16	0.17	0.17	0.17
2150	0.13	0.13	0.13	0.14	0.14	0.14	0.14	0.15	0.15	0.15
2200	0.06	0.06	0.07	0.07	0.07	0.08	0.08	0.08	0.09	0.09
# of days ramp up:	4.75									

Profiles	11	12	13	14	15	16	17	18	19
Duration (Hours)	60-66	66-72	72-78	78-84	84-90	90-96	96-102	102-108	108-114
Depth (m)									10-year
50	1.42	1.44	1.45	1.47	1.49	1.51	1.52	1.54	1.56
100	1.35	1.37	1.39	1.41	1.43	1.45	1.46	1.48	1.5
150	1.22	1.24	1.26	1.28	1.30	1.32	1.33	1.35	1.37
200	1.15	1.17	1.18	1.20	1.22	1.24	1.25	1.27	1.29
250	0.99	1.01	1.02	1.04	1.06	1.08	1.09	1.11	1.13
300	0.91	0.93	0.95	0.96	0.98	1.00	1.02	1.03	1.05
350	0.84	0.86	0.88	0.89	0.91	0.93	0.95	0.96	0.98
800	0.44	0.45	0.46	0.47	0.48	0.50	0.51	0.52	0.53
1200	0.27	0.28	0.29	0.30	0.31	0.32	0.32	0.33	0.34
1600	0.17	0.18	0.18	0.19	0.19	0.20	0.20	0.21	0.21
1800	0.17	0.17	0.18	0.18	0.18	0.18	0.19	0.19	0.19
2150	0.15	0.15	0.16	0.16	0.16	0.16	0.17	0.17	0.17
2200	0.09	0.10	0.10	0.10	0.11	0.11	0.11	0.12	0.12

SOURCE: PETROBRAS Propriety Metocean Data



3.1.42 Ramp down from 10-Year to 1-year Current Profiles (m/s) With Surface SW Direction

Profiles	19	20	21	22	23	24	25	26
Duration (Hours)	108-114	114-120	120-126	126-132	132-138	138-144	144-150	150-156
Depth (m)	10-year							
50	1.56	1.54	1.51	1.49	1.47	1.45	1.42	1.40
100	1.50	1.48	1.45	1.43	1.41	1.38	1.36	1.34
150	1.37	1.35	1.32	1.30	1.28	1.25	1.23	1.21
200	1.29	1.27	1.24	1.22	1.20	1.18	1.15	1.13
250	1.13	1.11	1.08	1.06	1.04	1.02	0.99	0.97
300	1.05	1.03	1.01	0.98	0.96	0.94	0.92	0.90
350	0.98	0.96	0.94	0.91	0.89	0.87	0.85	0.83
800	0.53	0.52	0.50	0.49	0.47	0.46	0.44	0.43
1200	0.34	0.33	0.32	0.31	0.30	0.29	0.28	0.27
1600	0.21	0.20	0.20	0.19	0.18	0.18	0.17	0.17
1800	0.19	0.19	0.18	0.18	0.18	0.18	0.17	0.17
2150	0.17	0.17	0.16	0.16	0.16	0.16	0.15	0.15
2200	0.12	0.12	0.11	0.11	0.10	0.10	0.09	0.09
# of days ramp down:	3.5							

Profiles	27	28	29	30	31	32	33
Duration (Hours)	156-162	162-168	168-174	174-180	180-186	186-192	192-198
Depth (m)							1-year
50	1.38	1.35	1.33	1.31	1.29	1.26	1.24
100	1.31	1.29	1.26	1.24	1.22	1.19	1.17
150	1.18	1.16	1.13	1.11	1.09	1.06	1.04
200	1.11	1.08	1.06	1.04	1.02	0.99	0.97
250	0.95	0.92	0.90	0.88	0.86	0.83	0.81
300	0.87	0.85	0.83	0.81	0.78	0.76	0.74
350	0.80	0.78	0.76	0.74	0.71	0.69	0.67
800	0.41	0.40	0.38	0.37	0.35	0.34	0.32
1200	0.25	0.24	0.23	0.22	0.21	0.20	0.19
1600	0.16	0.15	0.15	0.14	0.13	0.13	0.12
1800	0.17	0.16	0.16	0.16	0.16	0.15	0.15
2150	0.15	0.14	0.14	0.14	0.14	0.13	0.13
2200	0.09	0.08	0.08	0.07	0.07	0.06	0.06

SOURCE: PETROBRAS Propriety Metocean Data



TECHNICAL REPORT

No.: **I-RL-3A00.00-1000-941-PPC-001 rev.A**

Project: **SANTOS BASIN NORTHERN PRE-SALT FIELDS**

Sheet: **32 of 89**

Title: **DURATION OF EXTREME CURRENT PROFILES AND CLUSTERS OF SIMULTANEOUS METOCEAN CONDITIONS**

3.1.43 Ramp up from 1-Year to 100-year Current Profiles (m/s) With Surface SW Direction

Profiles	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Duration (Hours)	0-6	6-12	12-18	18-24	24-30	30-36	36-42	42-48	48-54	54-60	60-66	66-72	72-78	78-84
Depth (m)	1-year													
50	1.24	1.26	1.28	1.30	1.32	1.35	1.37	1.39	1.41	1.43	1.45	1.47	1.49	1.51
100	1.17	1.19	1.21	1.23	1.26	1.28	1.30	1.32	1.34	1.36	1.38	1.41	1.43	1.45
150	1.04	1.06	1.08	1.10	1.13	1.15	1.17	1.19	1.21	1.23	1.25	1.28	1.30	1.32
200	0.97	0.99	1.01	1.03	1.05	1.08	1.10	1.12	1.14	1.16	1.18	1.20	1.22	1.24
250	0.81	0.83	0.85	0.87	0.89	0.91	0.93	0.96	0.98	1.00	1.02	1.04	1.06	1.08
300	0.74	0.76	0.78	0.80	0.82	0.84	0.86	0.89	0.91	0.93	0.95	0.97	0.99	1.01
350	0.67	0.69	0.71	0.73	0.75	0.77	0.79	0.81	0.83	0.85	0.87	0.89	0.91	0.93
800	0.32	0.33	0.35	0.36	0.37	0.39	0.40	0.42	0.43	0.44	0.46	0.47	0.48	0.50
1200	0.19	0.20	0.21	0.22	0.23	0.24	0.25	0.26	0.27	0.28	0.29	0.30	0.31	0.32
1600	0.12	0.13	0.13	0.14	0.14	0.15	0.15	0.16	0.16	0.17	0.18	0.18	0.19	0.19
1800	0.15	0.15	0.16	0.16	0.16	0.16	0.17	0.17	0.17	0.18	0.18	0.18	0.19	0.19
2150	0.13	0.13	0.14	0.14	0.14	0.14	0.15	0.15	0.15	0.16	0.16	0.16	0.17	0.17
2200	0.06	0.06	0.07	0.07	0.08	0.08	0.08	0.09	0.09	0.10	0.10	0.10	0.11	0.11
# of days ramp up:	7.00													

Profiles	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Duration (Hours)	84-90	90-96	96-102	102-108	108-114	114-120	120-126	126-132	132-138	138-144	144-150	150-156	156-162	162-168
Depth (m)														100-year
50	1.54	1.56	1.58	1.60	1.62	1.64	1.66	1.68	1.70	1.73	1.75	1.77	1.79	1.81
100	1.47	1.49	1.51	1.54	1.56	1.58	1.60	1.62	1.64	1.66	1.69	1.71	1.73	1.75
150	1.34	1.36	1.38	1.41	1.43	1.45	1.47	1.49	1.51	1.53	1.56	1.58	1.60	1.62
200	1.27	1.29	1.31	1.33	1.35	1.37	1.39	1.41	1.43	1.46	1.48	1.50	1.52	1.54
250	1.10	1.12	1.14	1.16	1.18	1.20	1.22	1.25	1.27	1.29	1.31	1.33	1.35	1.37
300	1.03	1.05	1.07	1.09	1.11	1.13	1.15	1.18	1.20	1.22	1.24	1.26	1.28	1.30
350	0.95	0.97	0.99	1.01	1.03	1.05	1.07	1.09	1.11	1.13	1.15	1.17	1.19	1.21
800	0.51	0.53	0.54	0.55	0.57	0.58	0.59	0.61	0.62	0.64	0.65	0.66	0.68	0.69
1200	0.33	0.34	0.35	0.36	0.37	0.38	0.39	0.40	0.41	0.42	0.43	0.44	0.45	0.46
1600	0.20	0.20	0.21	0.21	0.22	0.23	0.23	0.24	0.24	0.25	0.25	0.26	0.26	0.27
1800	0.19	0.19	0.20	0.20	0.20	0.21	0.21	0.21	0.22	0.22	0.22	0.22	0.23	0.23
2150	0.17	0.17	0.18	0.18	0.18	0.19	0.19	0.19	0.20	0.20	0.20	0.20	0.21	0.21
2200	0.12	0.12	0.13	0.13	0.13	0.14	0.14	0.15	0.15	0.15	0.16	0.16	0.17	0.17

SOURCE: PETROBRAS Propriety Metocean Data



TECHNICAL REPORT

No.: **I-RL-3A00.00-1000-941-PPC-001 rev.A**

Project: **SANTOS BASIN NORTHERN PRE-SALT FIELDS**

Sheet: **33 of 89**

Title: **DURATION OF EXTREME CURRENT PROFILES AND CLUSTERS OF SIMULTANEOUS METOCEAN CONDITIONS**

3.1.44 Ramp down from 100-Year to 1-year Current Profiles (m/s) With Surface SW Direction

Profiles	28	29	30	31	32	33	34	35	36	37	38	39
Duration (Hours)	162-168	168-174	174-180	180-186	186-192	192-198	198-204	204-210	210-216	216-222	222-228	228-234
Depth (m)	100-year											
50	1.81	1.78	1.76	1.73	1.70	1.67	1.65	1.62	1.59	1.57	1.54	1.51
100	1.75	1.72	1.69	1.67	1.64	1.61	1.58	1.56	1.53	1.50	1.47	1.45
150	1.62	1.59	1.56	1.54	1.51	1.48	1.45	1.43	1.40	1.37	1.34	1.32
200	1.54	1.51	1.49	1.46	1.43	1.40	1.38	1.35	1.32	1.30	1.27	1.24
250	1.37	1.34	1.32	1.29	1.26	1.24	1.21	1.18	1.16	1.13	1.10	1.08
300	1.30	1.27	1.25	1.22	1.19	1.17	1.14	1.11	1.09	1.06	1.03	1.01
350	1.21	1.18	1.16	1.13	1.11	1.08	1.06	1.03	1.00	0.98	0.95	0.93
800	0.69	0.67	0.65	0.64	0.62	0.60	0.58	0.57	0.55	0.53	0.51	0.50
1200	0.46	0.45	0.43	0.42	0.41	0.40	0.38	0.37	0.36	0.34	0.33	0.32
1600	0.27	0.26	0.26	0.25	0.24	0.23	0.23	0.22	0.21	0.21	0.20	0.19
1800	0.23	0.23	0.22	0.22	0.21	0.21	0.21	0.20	0.20	0.20	0.19	0.19
2150	0.21	0.21	0.20	0.20	0.19	0.19	0.19	0.18	0.18	0.18	0.17	0.17
2200	0.17	0.16	0.16	0.15	0.15	0.14	0.14	0.13	0.13	0.12	0.12	0.11
# of days ramp down:	5.25											

Profiles	40	41	42	43	44	45	46	47	48	49
Duration (Hours)	234-240	240-246	246-252	252-258	258-264	264-270	270-276	276-282	282-288	288-294
Depth (m)										1-year
50	1.48	1.46	1.43	1.40	1.38	1.35	1.32	1.29	1.27	1.24
100	1.42	1.39	1.36	1.34	1.31	1.28	1.25	1.23	1.20	1.17
150	1.29	1.26	1.23	1.21	1.18	1.15	1.12	1.10	1.07	1.04
200	1.21	1.19	1.16	1.13	1.11	1.08	1.05	1.02	1.00	0.97
250	1.05	1.02	1.00	0.97	0.94	0.92	0.89	0.86	0.84	0.81
300	0.98	0.95	0.93	0.90	0.87	0.85	0.82	0.79	0.77	0.74
350	0.90	0.88	0.85	0.82	0.80	0.77	0.75	0.72	0.70	0.67
800	0.48	0.46	0.44	0.43	0.41	0.39	0.37	0.36	0.34	0.32
1200	0.31	0.29	0.28	0.27	0.25	0.24	0.23	0.22	0.20	0.19
1600	0.18	0.18	0.17	0.16	0.16	0.15	0.14	0.13	0.13	0.12
1800	0.18	0.18	0.18	0.17	0.17	0.17	0.16	0.16	0.15	0.15
2150	0.16	0.16	0.16	0.15	0.15	0.15	0.14	0.14	0.13	0.13
2200	0.11	0.10	0.10	0.09	0.09	0.08	0.08	0.07	0.07	0.06

SOURCE: PETROBRAS Propriety Metocean Data



TECHNICAL REPORT

No.: **I-RL-3A00.00-1000-941-PPC-001 rev.A**

Project: **SANTOS BASIN NORTHERN PRE-SALT FIELDS**

Sheet: **34 of 89**

Title: **DURATION OF EXTREME CURRENT PROFILES AND CLUSTERS OF SIMULTANEOUS METOCEAN CONDITIONS**

3.1.45 Ramp up from 1-Year to 10-year Current Profiles (m/s) With Surface WSW Direction

Profiles	1	2	3	4	5	6	7	8	9	10	11
Duration (Hours)	0-6	6-12	12-18	18-24	24-30	30-36	36-42	42-48	48-54	54-60	60-66
Depth (m)	1-year										
50	1.10	1.11	1.13	1.14	1.16	1.17	1.19	1.20	1.22	1.23	1.25
100	1.07	1.08	1.10	1.11	1.13	1.14	1.16	1.17	1.19	1.20	1.22
150	0.98	0.99	1.01	1.02	1.04	1.05	1.07	1.08	1.10	1.11	1.13
200	0.83	0.84	0.86	0.87	0.89	0.90	0.92	0.93	0.94	0.96	0.97
250	0.72	0.73	0.75	0.76	0.78	0.79	0.81	0.82	0.83	0.85	0.86
300	0.63	0.64	0.66	0.67	0.69	0.70	0.72	0.73	0.74	0.76	0.77
350	0.56	0.57	0.59	0.60	0.62	0.63	0.65	0.66	0.67	0.69	0.70
800	0.25	0.26	0.27	0.28	0.29	0.30	0.31	0.32	0.33	0.34	0.34
1200	0.18	0.19	0.19	0.20	0.21	0.22	0.22	0.23	0.24	0.25	0.25
1600	0.15	0.15	0.16	0.16	0.16	0.17	0.17	0.17	0.18	0.18	0.18
1800	0.17	0.17	0.17	0.17	0.18	0.18	0.18	0.18	0.18	0.18	0.19
2150	0.16	0.16	0.17	0.17	0.17	0.17	0.18	0.18	0.18	0.18	0.19
2200	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.09	0.09	0.10
# of days ramp up:	5.00										

Profiles	12	13	14	15	16	17	18	19	20
Duration (Hours)	66-72	72-78	78-84	84-90	90-96	96-102	102-108	108-114	114-120
Depth (m)									10-year
50	1.26	1.28	1.29	1.31	1.32	1.34	1.35	1.37	1.38
100	1.23	1.25	1.26	1.28	1.29	1.31	1.32	1.34	1.35
150	1.14	1.16	1.17	1.19	1.20	1.22	1.23	1.25	1.26
200	0.99	1.00	1.01	1.03	1.04	1.06	1.07	1.09	1.10
250	0.88	0.89	0.90	0.92	0.93	0.95	0.96	0.98	0.99
300	0.79	0.80	0.81	0.83	0.84	0.86	0.87	0.89	0.90
350	0.72	0.73	0.74	0.76	0.77	0.79	0.80	0.82	0.83
800	0.35	0.36	0.37	0.38	0.39	0.40	0.41	0.42	0.43
1200	0.26	0.27	0.28	0.28	0.29	0.30	0.31	0.31	0.32
1600	0.18	0.19	0.19	0.19	0.20	0.20	0.20	0.21	0.21
1800	0.19	0.19	0.19	0.19	0.19	0.20	0.20	0.20	0.20
2150	0.19	0.19	0.19	0.20	0.20	0.20	0.20	0.21	0.21
2200	0.10	0.10	0.10	0.10	0.10	0.11	0.11	0.11	0.11

SOURCE: PETROBRAS Propriety Metocean Data



TECHNICAL REPORT

No.: **I-RL-3A00.00-1000-941-PPC-001 rev.A**

Project: **SANTOS BASIN NORTHERN PRE-SALT FIELDS**

Sheet: **35 of 89**

Title: **DURATION OF EXTREME CURRENT PROFILES AND CLUSTERS OF SIMULTANEOUS METOCEAN CONDITIONS**

3.1.46 Ramp down from 10-Year to 1-year Current Profiles (m/s) With Surface WSW Direction

Profiles	20	21	22	23	24	25	26	27
Duration (Hours)	114-120	120-126	126-132	132-138	138-144	144-150	150-156	156-162
Depth (m)	10-year							
50	1.38	1.36	1.34	1.32	1.31	1.29	1.27	1.25
100	1.35	1.33	1.31	1.29	1.28	1.26	1.24	1.22
150	1.26	1.24	1.22	1.20	1.19	1.17	1.15	1.13
200	1.10	1.08	1.06	1.05	1.03	1.01	0.99	0.97
250	0.99	0.97	0.95	0.94	0.92	0.90	0.88	0.86
300	0.90	0.88	0.86	0.85	0.83	0.81	0.79	0.77
350	0.83	0.81	0.79	0.78	0.76	0.74	0.72	0.70
800	0.43	0.42	0.41	0.39	0.38	0.37	0.36	0.35
1200	0.32	0.31	0.30	0.29	0.28	0.27	0.26	0.25
1600	0.21	0.21	0.20	0.20	0.19	0.19	0.19	0.18
1800	0.20	0.20	0.20	0.19	0.19	0.19	0.19	0.19
2150	0.21	0.21	0.20	0.20	0.20	0.19	0.19	0.19
2200	0.11	0.11	0.11	0.10	0.10	0.10	0.10	0.10
# of days ramp down:	3.75							

Profiles	28	29	30	31	32	33	34	35
Duration (Hours)	162-168	168-174	174-180	180-186	186-192	192-198	198-204	204-210
Depth (m)								1-year
50	1.23	1.21	1.19	1.17	1.16	1.14	1.12	1.10
100	1.20	1.18	1.16	1.14	1.13	1.11	1.09	1.07
150	1.11	1.09	1.07	1.05	1.04	1.02	1.00	0.98
200	0.96	0.94	0.92	0.90	0.88	0.87	0.85	0.83
250	0.85	0.83	0.81	0.79	0.77	0.76	0.74	0.72
300	0.76	0.74	0.72	0.70	0.68	0.67	0.65	0.63
350	0.69	0.67	0.65	0.63	0.61	0.60	0.58	0.56
800	0.33	0.32	0.31	0.30	0.29	0.27	0.26	0.25
1200	0.25	0.24	0.23	0.22	0.21	0.20	0.19	0.18
1600	0.18	0.17	0.17	0.17	0.16	0.16	0.15	0.15
1800	0.18	0.18	0.18	0.18	0.18	0.17	0.17	0.17
2150	0.18	0.18	0.18	0.17	0.17	0.17	0.16	0.16
2200	0.09	0.09	0.09	0.09	0.09	0.08	0.08	0.08

SOURCE: PETROBRAS Propriety Metocean Data



TECHNICAL REPORT

No.: **I-RL-3A00.00-1000-941-PPC-001 rev.A**

Project: **SANTOS BASIN NORTHERN PRE-SALT FIELDS**

Sheet: **36 of 89**

Title: **DURATION OF EXTREME CURRENT PROFILES AND CLUSTERS OF SIMULTANEOUS METOCEAN CONDITIONS**

3.1.47 Ramp up from 1-Year to 100-year Current Profiles (m/s) With Surface WSW Direction

Profiles	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Duration (Hours)	0-6	6-12	12-18	18-24	24-30	30-36	36-42	42-48	48-54	54-60	60-66	66-72	72-78	78-84
Depth (m)	1-year													
50	1.10	1.12	1.14	1.15	1.17	1.19	1.21	1.23	1.24	1.26	1.28	1.30	1.31	1.33
100	1.07	1.09	1.11	1.12	1.14	1.16	1.18	1.20	1.21	1.23	1.25	1.27	1.28	1.30
150	0.98	1.00	1.02	1.03	1.05	1.07	1.09	1.11	1.12	1.14	1.16	1.18	1.19	1.21
200	0.83	0.85	0.87	0.88	0.90	0.92	0.94	0.95	0.97	0.99	1.01	1.02	1.04	1.06
250	0.72	0.74	0.76	0.77	0.79	0.81	0.83	0.84	0.86	0.88	0.90	0.91	0.93	0.95
300	0.63	0.65	0.66	0.68	0.70	0.72	0.73	0.75	0.77	0.78	0.80	0.82	0.84	0.85
350	0.56	0.58	0.59	0.61	0.63	0.65	0.66	0.68	0.70	0.71	0.73	0.75	0.77	0.78
800	0.25	0.26	0.27	0.29	0.30	0.31	0.32	0.33	0.34	0.36	0.37	0.38	0.39	0.40
1200	0.18	0.19	0.20	0.21	0.21	0.22	0.23	0.24	0.25	0.26	0.27	0.27	0.28	0.29
1600	0.15	0.15	0.16	0.16	0.17	0.17	0.18	0.18	0.18	0.19	0.19	0.20	0.20	0.21
1800	0.17	0.17	0.17	0.18	0.18	0.18	0.18	0.18	0.18	0.19	0.19	0.19	0.19	0.19
2150	0.16	0.16	0.17	0.17	0.17	0.18	0.18	0.18	0.19	0.19	0.19	0.20	0.20	0.20
2200	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.10	0.10	0.10	0.10	0.10	0.11	0.11

of days ramp up: 7.25

Profiles	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
Duration (Hours)	84-90	90-96	96-102	102-108	108-114	114-120	120-126	126-132	132-138	138-144	144-150	150-156	156-162	162-168	168-174
Depth (m)															100-year
50	1.35	1.37	1.39	1.40	1.42	1.44	1.46	1.48	1.49	1.51	1.53	1.55	1.56	1.58	1.60
100	1.32	1.34	1.36	1.37	1.39	1.41	1.43	1.45	1.46	1.48	1.50	1.52	1.53	1.55	1.57
150	1.23	1.25	1.27	1.28	1.30	1.32	1.34	1.36	1.37	1.39	1.41	1.43	1.44	1.46	1.48
200	1.08	1.09	1.11	1.13	1.15	1.16	1.18	1.20	1.22	1.23	1.25	1.27	1.29	1.30	1.32
250	0.96	0.98	1.00	1.02	1.04	1.05	1.07	1.09	1.11	1.12	1.14	1.16	1.18	1.19	1.21
300	0.87	0.89	0.90	0.92	0.94	0.96	0.97	0.99	1.01	1.02	1.04	1.06	1.08	1.09	1.11
350	0.80	0.82	0.83	0.85	0.87	0.89	0.90	0.92	0.94	0.95	0.97	0.99	1.01	1.02	1.04
800	0.42	0.43	0.44	0.45	0.46	0.47	0.49	0.50	0.51	0.52	0.53	0.54	0.56	0.57	0.58
1200	0.30	0.31	0.32	0.33	0.33	0.34	0.35	0.36	0.37	0.38	0.39	0.39	0.40	0.41	0.42
1600	0.21	0.21	0.22	0.22	0.23	0.23	0.24	0.24	0.24	0.25	0.25	0.26	0.26	0.27	0.27
1800	0.20	0.20	0.20	0.20	0.20	0.20	0.21	0.21	0.21	0.21	0.21	0.21	0.22	0.22	0.22
2150	0.21	0.21	0.21	0.21	0.22	0.22	0.22	0.23	0.23	0.23	0.24	0.24	0.24	0.25	0.25
2200	0.11	0.11	0.11	0.12	0.12	0.12	0.12	0.13	0.13	0.13	0.13	0.13	0.14	0.14	0.14

SOURCE: PETROBRAS Propriety Metocean Data



TECHNICAL REPORT

No.: **I-RL-3A00.00-1000-941-PPC-001 rev.A**

Project: **SANTOS BASIN NORTHERN PRE-SALT FIELDS**

Sheet: **37 of 89**

Title: **DURATION OF EXTREME CURRENT PROFILES AND CLUSTERS OF SIMULTANEOUS METOCEAN CONDITIONS**

3.1.48 Ramp down from 100-Year to 1-year Current Profiles (m/s) With Surface WSW Direction

Profiles	29	30	31	32	33	34	35	36	37	38	39	40
Duration (Hours)	168-174	174-180	180-186	186-192	192-198	198-204	204-210	210-216	216-222	222-228	228-234	234-240
Depth (m)	100-year											
50	1.60	1.58	1.55	1.53	1.51	1.49	1.46	1.44	1.42	1.40	1.37	1.35
100	1.57	1.55	1.52	1.50	1.48	1.46	1.43	1.41	1.39	1.37	1.34	1.32
150	1.48	1.46	1.43	1.41	1.39	1.37	1.34	1.32	1.30	1.28	1.25	1.23
200	1.32	1.30	1.28	1.25	1.23	1.21	1.19	1.16	1.14	1.12	1.10	1.08
250	1.21	1.19	1.17	1.14	1.12	1.10	1.08	1.05	1.03	1.01	0.99	0.97
300	1.11	1.09	1.07	1.04	1.02	1.00	0.98	0.96	0.94	0.91	0.89	0.87
350	1.04	1.02	1.00	0.97	0.95	0.93	0.91	0.89	0.87	0.84	0.82	0.80
800	0.58	0.57	0.55	0.54	0.52	0.51	0.49	0.48	0.46	0.45	0.43	0.42
1200	0.42	0.41	0.40	0.39	0.38	0.37	0.35	0.34	0.33	0.32	0.31	0.30
1600	0.27	0.26	0.26	0.25	0.25	0.24	0.24	0.23	0.23	0.22	0.22	0.21
1800	0.22	0.22	0.22	0.21	0.21	0.21	0.21	0.20	0.20	0.20	0.20	0.20
2150	0.25	0.25	0.24	0.24	0.23	0.23	0.23	0.22	0.22	0.21	0.21	0.21
2200	0.14	0.14	0.13	0.13	0.13	0.13	0.12	0.12	0.12	0.12	0.11	0.11
# of days ramp down:	5.5											

Profiles	41	42	43	44	45	46	47	48	49	50	51
Duration (Hours)	240-246	246-252	252-258	258-264	264-270	270-276	276-282	282-288	288-294	294-300	300-306
Depth (m)											1-year
50	1.33	1.30	1.28	1.26	1.24	1.21	1.19	1.17	1.15	1.12	1.10
100	1.30	1.27	1.25	1.23	1.21	1.18	1.16	1.14	1.12	1.09	1.07
150	1.21	1.18	1.16	1.14	1.12	1.09	1.07	1.05	1.03	1.00	0.98
200	1.05	1.03	1.01	0.99	0.96	0.94	0.92	0.90	0.87	0.85	0.83
250	0.94	0.92	0.90	0.88	0.85	0.83	0.81	0.79	0.76	0.74	0.72
300	0.85	0.83	0.80	0.78	0.76	0.74	0.72	0.70	0.67	0.65	0.63
350	0.78	0.76	0.73	0.71	0.69	0.67	0.65	0.63	0.60	0.58	0.56
800	0.40	0.39	0.37	0.36	0.34	0.33	0.31	0.30	0.28	0.27	0.25
1200	0.29	0.28	0.27	0.26	0.25	0.23	0.22	0.21	0.20	0.19	0.18
1600	0.20	0.20	0.19	0.19	0.18	0.18	0.17	0.17	0.16	0.16	0.15
1800	0.19	0.19	0.19	0.19	0.18	0.18	0.18	0.18	0.17	0.17	0.17
2150	0.20	0.20	0.19	0.19	0.18	0.18	0.18	0.17	0.17	0.16	0.16
2200	0.11	0.10	0.10	0.10	0.10	0.09	0.09	0.09	0.09	0.08	0.08

SOURCE: PETROBRAS Propriety Metocean Data



TECHNICAL REPORT

No.: **I-RL-3A00.00-1000-941-PPC-001 rev.A**

Project: **SANTOS BASIN NORTHERN PRE-SALT FIELDS**

Sheet: **38 of 89**

Title: **DURATION OF EXTREME CURRENT PROFILES AND CLUSTERS OF SIMULTANEOUS METOCEAN CONDITIONS**

3.1.49 Ramp up from 1-Year to 10-year Current Profiles (m/s) With Surface W Direction

Profiles	1	2	3	4	5	6	7	8	9
Duration (Hours)	0-6	6-12	12-18	18-24	24-30	30-36	36-42	42-48	48-54
Depth (m)	1-year								
50	1.10	1.12	1.14	1.16	1.17	1.19	1.21	1.23	1.25
100	1.07	1.09	1.11	1.13	1.14	1.16	1.18	1.20	1.22
150	0.98	1.00	1.02	1.04	1.05	1.07	1.09	1.11	1.13
200	0.83	0.85	0.87	0.88	0.90	0.92	0.94	0.96	0.97
250	0.72	0.74	0.76	0.77	0.79	0.81	0.83	0.85	0.86
300	0.63	0.65	0.67	0.68	0.70	0.72	0.74	0.76	0.77
350	0.56	0.58	0.60	0.61	0.63	0.65	0.67	0.69	0.70
800	0.24	0.25	0.27	0.28	0.29	0.30	0.32	0.33	0.34
1200	0.18	0.19	0.20	0.21	0.21	0.22	0.23	0.24	0.25
1600	0.14	0.14	0.15	0.15	0.16	0.16	0.17	0.17	0.18
1800	0.17	0.17	0.17	0.18	0.18	0.18	0.18	0.18	0.19
2150	0.16	0.16	0.17	0.17	0.17	0.18	0.18	0.18	0.19
2200	0.09	0.09	0.09	0.10	0.10	0.10	0.10	0.10	0.11
# of days ramp up:	4.00								

Profiles	10	11	12	13	14	15	16
Duration (Hours)	54-60	60-66	66-72	72-78	78-84	84-90	90-96
Depth (m)							10-year
50	1.27	1.29	1.31	1.32	1.34	1.36	1.38
100	1.24	1.26	1.28	1.29	1.31	1.33	1.35
150	1.15	1.17	1.19	1.20	1.22	1.24	1.26
200	0.99	1.01	1.03	1.05	1.06	1.08	1.10
250	0.88	0.90	0.92	0.94	0.95	0.97	0.99
300	0.79	0.81	0.83	0.85	0.86	0.88	0.90
350	0.72	0.74	0.76	0.78	0.79	0.81	0.83
800	0.35	0.37	0.38	0.39	0.40	0.42	0.43
1200	0.26	0.27	0.28	0.28	0.29	0.30	0.31
1600	0.18	0.19	0.19	0.20	0.20	0.21	0.21
1800	0.19	0.19	0.19	0.19	0.20	0.20	0.20
2150	0.19	0.19	0.20	0.20	0.20	0.21	0.21
2200	0.11	0.11	0.11	0.11	0.12	0.12	0.12

SOURCE: PETROBRAS Propriety Metocean Data



3.1.50 Ramp down from 10-Year to 1-year Current Profiles (m/s) With Surface W Direction

Profiles	16	17	18	19	20	21	22
Duration (Hours)	90-96	96-102	102-108	108-114	114-120	120-126	126-132
Depth (m)	10-year						1-year
50	1.38	1.33	1.29	1.24	1.19	1.15	1.10
100	1.35	1.30	1.26	1.21	1.16	1.12	1.07
150	1.26	1.21	1.17	1.12	1.07	1.03	0.98
200	1.10	1.06	1.01	0.97	0.92	0.88	0.83
250	0.99	0.95	0.90	0.86	0.81	0.77	0.72
300	0.90	0.86	0.81	0.77	0.72	0.68	0.63
350	0.83	0.79	0.74	0.70	0.65	0.61	0.56
800	0.43	0.40	0.37	0.34	0.30	0.27	0.24
1200	0.31	0.29	0.27	0.25	0.22	0.20	0.18
1600	0.21	0.20	0.19	0.18	0.16	0.15	0.14
1800	0.20	0.20	0.19	0.19	0.18	0.18	0.17
2150	0.21	0.20	0.19	0.19	0.18	0.17	0.16
2200	0.12	0.12	0.11	0.11	0.10	0.10	0.09
# of days ramp down:	1.5						

SOURCE: PETROBRAS Propriety Metocean Data



TECHNICAL REPORT

No.: **I-RL-3A00.00-1000-941-PPC-001 rev.A**

Project: **SANTOS BASIN NORTHERN PRE-SALT FIELDS**

Sheet: **40 of 89**

Title: **DURATION OF EXTREME CURRENT PROFILES AND CLUSTERS OF SIMULTANEOUS METOCEAN CONDITIONS**

3.1.51 Ramp up from 1-Year to 100-year Current Profiles (m/s) With Surface W Direction

Profiles	1	2	3	4	5	6	7	8	9	10	11	12
Duration (Hours)	0-6	6-12	12-18	18-24	24-30	30-36	36-42	42-48	48-54	54-60	60-66	66-72
Depth (m)	1-year											
50	1.10	1.12	1.15	1.17	1.19	1.22	1.24	1.26	1.29	1.31	1.33	1.36
100	1.07	1.09	1.12	1.14	1.16	1.18	1.21	1.23	1.25	1.27	1.30	1.32
150	0.98	1.00	1.03	1.05	1.07	1.09	1.12	1.14	1.16	1.18	1.21	1.23
200	0.83	0.85	0.87	0.90	0.92	0.94	0.96	0.99	1.01	1.03	1.05	1.08
250	0.72	0.74	0.76	0.79	0.81	0.83	0.85	0.88	0.90	0.92	0.94	0.96
300	0.63	0.65	0.67	0.70	0.72	0.74	0.76	0.78	0.80	0.83	0.85	0.87
350	0.56	0.58	0.60	0.63	0.65	0.67	0.69	0.71	0.73	0.76	0.78	0.80
800	0.24	0.26	0.27	0.29	0.30	0.32	0.33	0.35	0.36	0.38	0.39	0.41
1200	0.18	0.19	0.20	0.21	0.22	0.23	0.25	0.26	0.27	0.28	0.29	0.30
1600	0.14	0.15	0.15	0.16	0.16	0.17	0.17	0.18	0.18	0.19	0.19	0.20
1800	0.17	0.17	0.18	0.18	0.18	0.18	0.19	0.19	0.19	0.19	0.20	0.20
2150	0.16	0.16	0.17	0.17	0.18	0.18	0.18	0.19	0.19	0.20	0.20	0.21
2200	0.09	0.09	0.10	0.10	0.10	0.10	0.11	0.11	0.11	0.11	0.12	0.12
# of days ramp up:	5.75											

Profiles	13	14	15	16	17	18	19	20	21	22	23
Duration (Hours)	72-78	78-84	84-90	90-96	96-102	102-108	108-114	114-120	120-126	126-132	132-138
Depth (m)											100-year
50	1.38	1.40	1.42	1.45	1.47	1.49	1.52	1.54	1.56	1.59	1.61
100	1.34	1.37	1.39	1.41	1.43	1.46	1.48	1.50	1.52	1.55	1.57
150	1.25	1.28	1.30	1.32	1.34	1.37	1.39	1.41	1.43	1.46	1.48
200	1.10	1.12	1.14	1.16	1.19	1.21	1.23	1.25	1.28	1.30	1.32
250	0.99	1.01	1.03	1.05	1.08	1.10	1.12	1.14	1.17	1.19	1.21
300	0.89	0.91	0.94	0.96	0.98	1.00	1.02	1.04	1.07	1.09	1.11
350	0.82	0.84	0.87	0.89	0.91	0.93	0.95	0.97	1.00	1.02	1.04
800	0.43	0.44	0.46	0.47	0.49	0.50	0.52	0.53	0.55	0.56	0.58
1200	0.31	0.32	0.33	0.34	0.35	0.37	0.38	0.39	0.40	0.41	0.42
1600	0.21	0.21	0.22	0.22	0.23	0.23	0.24	0.24	0.25	0.25	0.26
1800	0.20	0.21	0.21	0.21	0.21	0.22	0.22	0.22	0.22	0.23	0.23
2150	0.21	0.21	0.22	0.22	0.23	0.23	0.23	0.24	0.24	0.25	0.25
2200	0.12	0.13	0.13	0.13	0.13	0.14	0.14	0.14	0.14	0.15	0.15

SOURCE: PETROBRAS Propriety Metocean Data



TECHNICAL REPORT

No.: **I-RL-3A00.00-1000-941-PPC-001 rev.A**

Project: **SANTOS BASIN NORTHERN PRE-SALT FIELDS**

Sheet: **41 of 89**

Title: **DURATION OF EXTREME CURRENT PROFILES AND CLUSTERS OF SIMULTANEOUS METOCEAN CONDITIONS**

3.1.52 Ramp down from 100-Year to 1-year Current Profiles (m/s) With Surface W Direction

Profiles	23	24	25	26	27	28	29	30	31	32
Duration (Hours)	132-138	138-144	144-150	150-156	156-162	162-168	168-174	174-180	180-186	186-192
Depth (m)	100-year									1-year
50	1.61	1.55	1.50	1.44	1.38	1.33	1.27	1.21	1.16	1.10
100	1.57	1.51	1.46	1.40	1.35	1.29	1.24	1.18	1.13	1.07
150	1.48	1.42	1.37	1.31	1.26	1.20	1.15	1.09	1.04	0.98
200	1.32	1.27	1.21	1.16	1.10	1.05	0.99	0.94	0.88	0.83
250	1.21	1.16	1.10	1.05	0.99	0.94	0.88	0.83	0.77	0.72
300	1.11	1.06	1.00	0.95	0.90	0.84	0.79	0.74	0.68	0.63
350	1.04	0.99	0.93	0.88	0.83	0.77	0.72	0.67	0.61	0.56
800	0.58	0.54	0.50	0.47	0.43	0.39	0.35	0.32	0.28	0.24
1200	0.42	0.39	0.37	0.34	0.31	0.29	0.26	0.23	0.21	0.18
1600	0.26	0.25	0.23	0.22	0.21	0.19	0.18	0.17	0.15	0.14
1800	0.23	0.22	0.22	0.21	0.20	0.20	0.19	0.18	0.18	0.17
2150	0.25	0.24	0.23	0.22	0.21	0.20	0.19	0.18	0.17	0.16
2200	0.15	0.14	0.14	0.13	0.12	0.12	0.11	0.10	0.10	0.09
# of days ramp down:	2.25									

SOURCE: PETROBRAS Propriety Metocean Data



3.1.53 Ramp up from 1-Year to 10-year Current Profiles (m/s) With Surface WNW Direction

Profiles	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Duration (Hours)	0-6	6-12	12-18	18-24	24-30	30-36	36-42	42-48	48-54	54-60	60-66	66-72	72-78	78-84
Depth (m)	1-year													10-year
50	0.97	0.99	1.02	1.04	1.07	1.09	1.11	1.14	1.16	1.18	1.21	1.23	1.26	1.28
100	0.87	0.89	0.92	0.94	0.96	0.99	1.01	1.03	1.05	1.08	1.10	1.12	1.15	1.17
150	0.75	0.77	0.80	0.82	0.84	0.87	0.89	0.91	0.93	0.96	0.98	1.00	1.03	1.05
200	0.62	0.64	0.67	0.69	0.71	0.74	0.76	0.78	0.80	0.83	0.85	0.87	0.90	0.92
250	0.52	0.54	0.56	0.59	0.61	0.63	0.65	0.68	0.70	0.72	0.74	0.77	0.79	0.81
300	0.48	0.50	0.52	0.54	0.57	0.59	0.61	0.63	0.65	0.67	0.70	0.72	0.74	0.76
350	0.41	0.43	0.45	0.47	0.50	0.52	0.54	0.56	0.58	0.60	0.63	0.65	0.67	0.69
800	0.27	0.27	0.28	0.28	0.28	0.29	0.29	0.29	0.29	0.30	0.30	0.30	0.31	0.31
1200	0.12	0.12	0.13	0.13	0.13	0.14	0.14	0.14	0.14	0.15	0.15	0.15	0.16	0.16
1600	0.15	0.15	0.15	0.16	0.16	0.16	0.16	0.17	0.17	0.17	0.17	0.18	0.18	0.18
1800	0.10	0.11	0.11	0.12	0.12	0.13	0.13	0.14	0.14	0.15	0.15	0.16	0.16	0.17
2150	0.11	0.12	0.12	0.13	0.13	0.14	0.15	0.15	0.16	0.17	0.17	0.18	0.18	0.19
2200	0.05	0.06	0.06	0.07	0.07	0.08	0.08	0.09	0.09	0.10	0.10	0.11	0.11	0.12
# of days ramp up:	3.50													

SOURCE: PETROBRAS Propriety Metocean Data

3.1.54 Ramp down from 10-Year to 1-year Current Profiles (m/s) With Surface WNW Direction

Profiles	14	15	16	17	18	19	20
Duration (Hours)	78-84	84-90	90-96	96-102	102-108	108-114	114-120
Depth (m)	10-year						1-year
50	1.28	1.23	1.18	1.13	1.07	1.02	0.97
100	1.17	1.12	1.07	1.02	0.97	0.92	0.87
150	1.05	1.00	0.95	0.90	0.85	0.80	0.75
200	0.92	0.87	0.82	0.77	0.72	0.67	0.62
250	0.81	0.76	0.71	0.67	0.62	0.57	0.52
300	0.76	0.71	0.67	0.62	0.57	0.53	0.48
350	0.69	0.64	0.60	0.55	0.50	0.46	0.41
800	0.31	0.30	0.30	0.29	0.28	0.28	0.27
1200	0.16	0.15	0.15	0.14	0.13	0.13	0.12
1600	0.18	0.18	0.17	0.17	0.16	0.16	0.15
1800	0.17	0.16	0.15	0.14	0.12	0.11	0.10
2150	0.19	0.18	0.16	0.15	0.14	0.12	0.11
2200	0.12	0.11	0.10	0.09	0.07	0.06	0.05
# of days ramp down:	1.5						

SOURCE: PETROBRAS Propriety Metocean Data



TECHNICAL REPORT

No.: **I-RL-3A00.00-1000-941-PPC-001 rev.A**

Project: **SANTOS BASIN NORTHERN PRE-SALT FIELDS**

Sheet: **43 of 89**

Title: **DURATION OF EXTREME CURRENT PROFILES AND CLUSTERS OF SIMULTANEOUS METOCEAN CONDITIONS**

3.1.55 Ramp up from 1-Year to 100-year Current Profiles (m/s) With Surface WNW Direction

Profiles	1	2	3	4	5	6	7	8	9	10
Duration (Hours)	0-6	6-12	12-18	18-24	24-30	30-36	36-42	42-48	48-54	54-60
Depth (m)	1-year									
50	0.97	1.00	1.03	1.06	1.09	1.12	1.15	1.18	1.21	1.24
100	0.87	0.90	0.93	0.96	0.99	1.02	1.05	1.08	1.11	1.14
150	0.75	0.78	0.81	0.84	0.87	0.90	0.93	0.96	0.99	1.02
200	0.62	0.65	0.68	0.71	0.74	0.77	0.80	0.83	0.86	0.89
250	0.52	0.55	0.58	0.61	0.64	0.66	0.69	0.72	0.75	0.78
300	0.48	0.51	0.54	0.57	0.59	0.62	0.65	0.68	0.71	0.74
350	0.41	0.44	0.47	0.50	0.52	0.55	0.58	0.61	0.64	0.67
800	0.27	0.28	0.29	0.30	0.31	0.32	0.33	0.34	0.35	0.36
1200	0.12	0.13	0.14	0.14	0.15	0.16	0.17	0.18	0.18	0.19
1600	0.15	0.15	0.16	0.16	0.16	0.16	0.17	0.17	0.17	0.17
1800	0.10	0.11	0.11	0.12	0.13	0.13	0.14	0.15	0.15	0.16
2150	0.11	0.12	0.13	0.14	0.14	0.15	0.16	0.17	0.18	0.19
2200	0.05	0.06	0.06	0.07	0.08	0.08	0.09	0.10	0.10	0.11
# of days ramp up:	5.00									

Profiles	11	12	13	14	15	16	17	18	19	20
Duration (Hours)	60-66	66-72	72-78	78-84	84-90	90-96	96-102	102-108	108-114	114-120
Depth (m)										100-year
50	1.28	1.31	1.34	1.37	1.40	1.43	1.46	1.49	1.52	1.55
100	1.17	1.20	1.23	1.26	1.29	1.32	1.35	1.38	1.41	1.44
150	1.05	1.08	1.11	1.14	1.17	1.20	1.23	1.26	1.29	1.32
200	0.91	0.94	0.97	1.00	1.03	1.06	1.09	1.12	1.15	1.18
250	0.81	0.84	0.87	0.90	0.93	0.95	0.98	1.01	1.04	1.07
300	0.76	0.79	0.82	0.85	0.88	0.91	0.93	0.96	0.99	1.02
350	0.69	0.72	0.75	0.78	0.81	0.84	0.86	0.89	0.92	0.95
800	0.36	0.37	0.38	0.39	0.40	0.41	0.42	0.43	0.44	0.45
1200	0.20	0.21	0.21	0.22	0.23	0.24	0.25	0.25	0.26	0.27
1600	0.18	0.18	0.18	0.18	0.19	0.19	0.19	0.19	0.20	0.20
1800	0.17	0.18	0.18	0.19	0.20	0.20	0.21	0.22	0.22	0.23
2150	0.19	0.20	0.21	0.22	0.23	0.24	0.24	0.25	0.26	0.27
2200	0.12	0.13	0.13	0.14	0.15	0.15	0.16	0.17	0.17	0.18

SOURCE: PETROBRAS Propriety Metocean Data



3.1.56 Ramp down from 100-Year to 1-year Current Profiles (m/s) With Surface WNW Direction

Profiles	20	21	22	23	24	25	26	27	28	29
Duration (Hours)	114-120	120-126	126-132	132-138	138-144	144-150	150-156	156-162	162-168	168-174
Depth (m)	100-year									1-year
50	1.55	1.49	1.42	1.36	1.29	1.23	1.16	1.10	1.03	0.97
100	1.44	1.38	1.31	1.25	1.19	1.12	1.06	1.00	0.93	0.87
150	1.32	1.26	1.19	1.13	1.07	1.00	0.94	0.88	0.81	0.75
200	1.18	1.12	1.06	0.99	0.93	0.87	0.81	0.74	0.68	0.62
250	1.07	1.01	0.95	0.89	0.83	0.76	0.70	0.64	0.58	0.52
300	1.02	0.96	0.90	0.84	0.78	0.72	0.66	0.60	0.54	0.48
350	0.95	0.89	0.83	0.77	0.71	0.65	0.59	0.53	0.47	0.41
800	0.45	0.43	0.41	0.39	0.37	0.35	0.33	0.31	0.29	0.27
1200	0.27	0.25	0.24	0.22	0.20	0.19	0.17	0.15	0.14	0.12
1600	0.20	0.19	0.19	0.18	0.18	0.17	0.17	0.16	0.16	0.15
1800	0.23	0.22	0.20	0.19	0.17	0.16	0.14	0.13	0.11	0.10
2150	0.27	0.25	0.23	0.22	0.20	0.18	0.16	0.15	0.13	0.11
2200	0.18	0.17	0.15	0.14	0.12	0.11	0.09	0.08	0.06	0.05
# of days ramp down:		2.25								

SOURCE: PETROBRAS Propriety Metocean Data



3.1.57 Ramp up from 1-Year to 10-year Current Profiles (m/s) With Surface NW Direction

Profiles	1	2	3	4	5	6	7	8
Duration (Hours)	0-6	6-12	12-18	18-24	24-30	30-36	36-42	42-48
Depth (m)	1-year							10-year
50	1.04	1.09	1.13	1.18	1.23	1.28	1.32	1.37
100	0.99	1.03	1.08	1.12	1.17	1.21	1.26	1.30
150	0.88	0.92	0.96	1.00	1.04	1.08	1.12	1.16
200	0.75	0.78	0.82	0.85	0.89	0.92	0.96	0.99
250	0.65	0.68	0.71	0.74	0.77	0.80	0.83	0.86
300	0.57	0.60	0.62	0.65	0.67	0.70	0.72	0.75
350	0.51	0.53	0.56	0.58	0.60	0.62	0.65	0.67
800	0.20	0.22	0.24	0.26	0.27	0.29	0.31	0.33
1200	0.20	0.21	0.22	0.23	0.23	0.24	0.25	0.26
1600	0.13	0.14	0.15	0.16	0.18	0.19	0.20	0.21
1800	0.11	0.12	0.13	0.14	0.15	0.16	0.17	0.18
2150	0.15	0.16	0.16	0.17	0.18	0.19	0.19	0.20
2200	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14
# of days ramp up:	2.00							

SOURCE: PETROBRAS Propriety Metocean Data

3.1.58 Ramp down from 10-Year to 1-year Current Profiles (m/s) With Surface NW Direction

Profiles	8	9	10	11	12	13
Duration (Hours)	42-48	48-54	54-60	60-66	66-72	72-78
Depth (m)	10-year					1-year
50	1.37	1.30	1.24	1.17	1.11	1.04
100	1.30	1.24	1.18	1.11	1.05	0.99
150	1.16	1.10	1.05	0.99	0.94	0.88
200	0.99	0.94	0.89	0.85	0.80	0.75
250	0.86	0.82	0.78	0.73	0.69	0.65
300	0.75	0.71	0.68	0.64	0.61	0.57
350	0.67	0.64	0.61	0.57	0.54	0.51
800	0.33	0.30	0.28	0.25	0.23	0.20
1200	0.26	0.25	0.24	0.22	0.21	0.20
1600	0.21	0.19	0.18	0.16	0.15	0.13
1800	0.18	0.17	0.15	0.14	0.12	0.11
2150	0.20	0.19	0.18	0.17	0.16	0.15
2200	0.14	0.13	0.11	0.10	0.08	0.07
# of days ramp down:	1.25					

SOURCE: PETROBRAS Propriety Metocean Data



TECHNICAL REPORT

No.: **I-RL-3A00.00-1000-941-PPC-001 rev.A**

Project: **SANTOS BASIN NORTHERN PRE-SALT FIELDS**

Sheet: **46 of 89**

Title: **DURATION OF EXTREME CURRENT PROFILES AND CLUSTERS OF SIMULTANEOUS METOCEAN CONDITIONS**

3.1.59 Ramp up from 1-Year to 100-year Current Profiles (m/s) With Surface NW Direction

Profiles	1	2	3	4	5	6	7	8	9	10	11	12
Duration (Hours)	0-6	6-12	12-18	18-24	24-30	30-36	36-42	42-48	48-54	54-60	60-66	66-72
Depth (m)	1-year											100-year
50	1.04	1.09	1.15	1.20	1.26	1.31	1.37	1.42	1.48	1.53	1.59	1.64
100	0.99	1.04	1.09	1.15	1.20	1.25	1.30	1.35	1.40	1.46	1.51	1.56
150	0.88	0.93	0.97	1.02	1.07	1.11	1.16	1.20	1.25	1.30	1.34	1.39
200	0.75	0.79	0.83	0.87	0.91	0.95	0.98	1.02	1.06	1.10	1.14	1.18
250	0.65	0.68	0.72	0.75	0.79	0.82	0.86	0.89	0.93	0.96	1.00	1.03
300	0.57	0.60	0.63	0.66	0.69	0.72	0.75	0.78	0.81	0.84	0.87	0.90
350	0.51	0.54	0.56	0.59	0.62	0.64	0.67	0.69	0.72	0.75	0.77	0.80
800	0.20	0.22	0.24	0.26	0.28	0.30	0.32	0.34	0.36	0.38	0.40	0.42
1200	0.20	0.21	0.22	0.23	0.24	0.25	0.27	0.28	0.29	0.30	0.31	0.32
1600	0.13	0.14	0.16	0.17	0.18	0.19	0.21	0.22	0.23	0.24	0.26	0.27
1800	0.11	0.12	0.13	0.14	0.15	0.16	0.18	0.19	0.20	0.21	0.22	0.23
2150	0.15	0.16	0.17	0.17	0.18	0.19	0.20	0.21	0.22	0.22	0.23	0.24
2200	0.07	0.08	0.09	0.11	0.12	0.13	0.14	0.15	0.16	0.18	0.19	0.20
# of days ramp up:	3.00											

SOURCE: PETROBRAS Propriety Metocean Data

3.1.60 Ramp down from 100-Year to 1-year Current Profiles (m/s) With Surface NW Direction

Profiles	12	13	14	15	16	17	18	19
Duration (Hours)	66-72	72-78	78-84	84-90	90-96	96-102	102-108	108-114
Depth (m)	100-year							1-year
50	1.64	1.55	1.47	1.38	1.30	1.21	1.13	1.04
100	1.56	1.48	1.40	1.32	1.23	1.15	1.07	0.99
150	1.39	1.32	1.24	1.17	1.10	1.03	0.95	0.88
200	1.18	1.12	1.06	1.00	0.93	0.87	0.81	0.75
250	1.03	0.98	0.92	0.87	0.81	0.76	0.70	0.65
300	0.90	0.85	0.81	0.76	0.71	0.66	0.62	0.57
350	0.80	0.76	0.72	0.68	0.63	0.59	0.55	0.51
800	0.42	0.39	0.36	0.33	0.29	0.26	0.23	0.20
1200	0.32	0.30	0.29	0.27	0.25	0.23	0.22	0.20
1600	0.27	0.25	0.23	0.21	0.19	0.17	0.15	0.13
1800	0.23	0.21	0.20	0.18	0.16	0.14	0.13	0.11
2150	0.24	0.23	0.21	0.20	0.19	0.18	0.16	0.15
2200	0.20	0.18	0.16	0.14	0.13	0.11	0.09	0.07
# of days ramp down:	1.75							

SOURCE: PETROBRAS Propriety Metocean Data

3.1.61 Ramp up from 1-Year to 10-year Current Profiles (m/s) With Surface NNW Direction

Profiles	1	2	3	4	5	6	7	8
Duration (Hours)	0-6	6-12	12-18	18-24	24-30	30-36	36-42	42-48
Depth (m)	1-year							10-year
50	0.85	0.89	0.93	0.97	1.01	1.05	1.09	1.13
100	0.78	0.82	0.85	0.89	0.93	0.97	1.00	1.04
150	0.60	0.63	0.66	0.69	0.71	0.74	0.77	0.80
200	0.57	0.60	0.62	0.65	0.68	0.71	0.73	0.76
250	0.50	0.52	0.55	0.57	0.59	0.61	0.64	0.66
300	0.46	0.48	0.50	0.52	0.55	0.57	0.59	0.61
350	0.43	0.45	0.47	0.49	0.51	0.53	0.55	0.57
800	0.22	0.23	0.24	0.25	0.26	0.27	0.28	0.29
1200	0.18	0.19	0.20	0.21	0.21	0.22	0.23	0.24
1600	0.18	0.19	0.20	0.21	0.21	0.22	0.23	0.24
1800	0.17	0.18	0.19	0.20	0.20	0.21	0.22	0.23
2150	0.17	0.18	0.19	0.20	0.20	0.21	0.22	0.23
2200	0.08	0.08	0.09	0.09	0.10	0.10	0.11	0.11
# of days ramp up:	2.00							

SOURCE: PETROBRAS Propriety Metocean Data

3.1.62 Ramp down from 10-Year to 1-year Current Profiles (m/s) With Surface NNW Direction

Profiles	8	9	10	11	12	13
Duration (Hours)	42-48	48-54	54-60	60-66	66-72	72-78
Depth (m)	10-year					1-year
50	1.13	1.07	1.02	0.96	0.91	0.85
100	1.04	0.99	0.94	0.88	0.83	0.78
150	0.80	0.76	0.72	0.68	0.64	0.60
200	0.76	0.72	0.68	0.65	0.61	0.57
250	0.66	0.63	0.60	0.56	0.53	0.50
300	0.61	0.58	0.55	0.52	0.49	0.46
350	0.57	0.54	0.51	0.49	0.46	0.43
800	0.29	0.28	0.26	0.25	0.23	0.22
1200	0.24	0.23	0.22	0.20	0.19	0.18
1600	0.24	0.23	0.22	0.20	0.19	0.18
1800	0.23	0.22	0.21	0.19	0.18	0.17
2150	0.23	0.22	0.21	0.19	0.18	0.17
2200	0.11	0.10	0.10	0.09	0.09	0.08
# of days ramp down:	1.25					

SOURCE: PETROBRAS Propriety Metocean Data



3.1.63 Ramp up from 1-Year to 100-year Current Profiles (m/s) With Surface NNW Direction

Profiles	1	2	3	4	5	6	7	8	9	10	11
Duration (Hours)	0-6	6-12	12-18	18-24	24-30	30-36	36-42	42-48	48-54	54-60	60-66
Depth (m)	1-year										100-year
50	0.85	0.90	0.95	1.00	1.05	1.11	1.16	1.21	1.26	1.31	1.36
100	0.78	0.83	0.87	0.92	0.97	1.02	1.06	1.11	1.16	1.20	1.25
150	0.60	0.64	0.67	0.71	0.74	0.78	0.82	0.85	0.89	0.92	0.96
200	0.57	0.60	0.64	0.67	0.71	0.74	0.77	0.81	0.84	0.88	0.91
250	0.50	0.53	0.56	0.59	0.62	0.65	0.68	0.71	0.74	0.77	0.80
300	0.46	0.49	0.52	0.54	0.57	0.60	0.63	0.66	0.68	0.71	0.74
350	0.43	0.46	0.48	0.51	0.53	0.56	0.59	0.61	0.64	0.66	0.69
800	0.22	0.23	0.25	0.26	0.27	0.29	0.30	0.31	0.32	0.34	0.35
1200	0.18	0.19	0.20	0.21	0.22	0.24	0.25	0.26	0.27	0.28	0.29
1600	0.18	0.19	0.20	0.21	0.22	0.24	0.25	0.26	0.27	0.28	0.29
1800	0.17	0.18	0.19	0.20	0.21	0.22	0.23	0.24	0.25	0.26	0.27
2150	0.17	0.18	0.19	0.20	0.21	0.22	0.23	0.24	0.25	0.26	0.27
2200	0.08	0.09	0.09	0.10	0.10	0.11	0.11	0.12	0.12	0.13	0.13
# of days ramp up:	2.75										

SOURCE: PETROBRAS Propriety Metocean Data

3.1.64 Ramp down from 100-Year to 1-year Current Profiles (m/s) With Surface NNW Direction

Profiles	11	12	13	14	15	16	17	18
Duration (Hours)	60-66	66-72	72-78	78-84	84-90	90-96	96-102	102-108
Depth (m)	100-year							1-year
50	1.36	1.29	1.21	1.14	1.07	1.00	0.92	0.85
100	1.25	1.18	1.12	1.05	0.98	0.91	0.85	0.78
150	0.96	0.91	0.86	0.81	0.75	0.70	0.65	0.60
200	0.91	0.86	0.81	0.76	0.72	0.67	0.62	0.57
250	0.80	0.76	0.71	0.67	0.63	0.59	0.54	0.50
300	0.74	0.70	0.66	0.62	0.58	0.54	0.50	0.46
350	0.69	0.65	0.62	0.58	0.54	0.50	0.47	0.43
800	0.35	0.33	0.31	0.29	0.28	0.26	0.24	0.22
1200	0.29	0.27	0.26	0.24	0.23	0.21	0.20	0.18
1600	0.29	0.27	0.26	0.24	0.23	0.21	0.20	0.18
1800	0.27	0.26	0.24	0.23	0.21	0.20	0.18	0.17
2150	0.27	0.26	0.24	0.23	0.21	0.20	0.18	0.17
2200	0.13	0.12	0.12	0.11	0.10	0.09	0.09	0.08
# of days ramp down:	1.75							

SOURCE: PETROBRAS Propriety Metocean Data

3.2 Profiles of Extreme Current (m/s) at 800 m Level

3.2.1 Ramp up from 1-Year to 10-year Current Profiles (m/s) at 800 m Level N Direction

Profiles	1	2	3	4	5	6
Duration (Hours)	0-6	6-12	12-18	18-24	24-30	30-36
Depth (m)	1-year					10-year
50	0.31	0.32	0.34	0.35	0.37	0.38
100	0.28	0.29	0.30	0.31	0.32	0.33
150	0.26	0.27	0.29	0.30	0.32	0.33
200	0.28	0.29	0.31	0.32	0.34	0.35
250	0.30	0.32	0.33	0.35	0.36	0.38
300	0.31	0.33	0.34	0.36	0.37	0.39
350	0.38	0.40	0.41	0.43	0.44	0.46
800	0.45	0.46	0.48	0.49	0.51	0.52
1200	0.26	0.27	0.28	0.30	0.31	0.32
1600	0.08	0.09	0.10	0.11	0.12	0.13
1800	0.12	0.13	0.13	0.14	0.14	0.15
2150	0.13	0.14	0.14	0.15	0.15	0.16
2200	0.12	0.13	0.14	0.14	0.15	0.16
# of days ramp up:	1.50					

SOURCE: PETROBRAS Propriety Metocean Data

3.2.2 Ramp down from 10-Year to 1-year Current Profiles (m/s) at 800 m Level N Direction

Profiles	6	7	8	9
Duration (Hours)	30-36	36-42	42-48	48-54
Depth (m)	10-year			1-year
50	0.38	0.36	0.33	0.31
100	0.33	0.31	0.30	0.28
150	0.33	0.31	0.28	0.26
200	0.35	0.33	0.30	0.28
250	0.38	0.35	0.33	0.30
300	0.39	0.36	0.34	0.31
350	0.46	0.43	0.41	0.38
800	0.52	0.50	0.47	0.45
1200	0.32	0.30	0.28	0.26
1600	0.13	0.11	0.10	0.08
1800	0.15	0.14	0.13	0.12
2150	0.16	0.15	0.14	0.13
2200	0.16	0.15	0.13	0.12
# of days ramp down:	0.75			

SOURCE: PETROBRAS Propriety Metocean Data

3.2.3 Ramp up from 1-Year to 100-year Current Profiles (m/s) at 800 m Level N Direction

Profiles	1	2	3	4	5	6	7	8	9	10
Duration (Hours)	0-6	6-12	12-18	18-24	24-30	30-36	36-42	42-48	48-54	54-60
Depth (m)	1-year									100-year
50	0.31	0.32	0.34	0.35	0.36	0.38	0.39	0.40	0.42	0.43
100	0.28	0.29	0.30	0.31	0.32	0.33	0.34	0.35	0.36	0.37
150	0.26	0.27	0.29	0.30	0.32	0.33	0.35	0.36	0.38	0.39
200	0.28	0.29	0.31	0.32	0.33	0.35	0.36	0.37	0.39	0.40
250	0.30	0.32	0.33	0.35	0.36	0.38	0.39	0.41	0.42	0.44
300	0.31	0.33	0.34	0.36	0.38	0.39	0.41	0.43	0.44	0.46
350	0.38	0.40	0.41	0.43	0.45	0.46	0.48	0.50	0.51	0.53
800	0.45	0.46	0.48	0.49	0.51	0.52	0.54	0.55	0.57	0.58
1200	0.26	0.27	0.29	0.30	0.31	0.33	0.34	0.35	0.37	0.38
1600	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16	0.17
1800	0.12	0.13	0.13	0.14	0.15	0.15	0.16	0.17	0.17	0.18
2150	0.13	0.14	0.14	0.15	0.15	0.16	0.16	0.17	0.17	0.18
2200	0.12	0.13	0.13	0.14	0.15	0.15	0.16	0.17	0.17	0.18
# of days ramp up:	2.50									

SOURCE: PETROBRAS Propriety Metocean Data

3.2.4 Ramp down from 100-Year to 1-year Current Profiles (m/s) at 800 m Level N Direction

Profiles	10	11	12	13	14	15	16
Duration (Hours)	54-60	60-66	66-72	72-78	78-84	84-90	90-96
Depth (m)	100-year						1-year
50	0.43	0.41	0.39	0.37	0.35	0.33	0.31
100	0.37	0.36	0.34	0.33	0.31	0.30	0.28
150	0.39	0.37	0.35	0.33	0.30	0.28	0.26
200	0.40	0.38	0.36	0.34	0.32	0.30	0.28
250	0.44	0.42	0.39	0.37	0.35	0.32	0.30
300	0.46	0.44	0.41	0.39	0.36	0.34	0.31
350	0.53	0.51	0.48	0.46	0.43	0.41	0.38
800	0.58	0.56	0.54	0.52	0.49	0.47	0.45
1200	0.38	0.36	0.34	0.32	0.30	0.28	0.26
1600	0.17	0.16	0.14	0.13	0.11	0.10	0.08
1800	0.18	0.17	0.16	0.15	0.14	0.13	0.12
2150	0.18	0.17	0.16	0.16	0.15	0.14	0.13
2200	0.18	0.17	0.16	0.15	0.14	0.13	0.12
# of days ramp down:	1.5						

SOURCE: PETROBRAS Propriety Metocean Data



TECHNICAL REPORT

No.: **I-RL-3A00.00-1000-941-PPC-001 rev.A**

Project: **SANTOS BASIN NORTHERN PRE-SALT FIELDS**

Sheet: **51 of 89**

Title: **DURATION OF EXTREME CURRENT PROFILES AND CLUSTERS OF SIMULTANEOUS METOCEAN CONDITIONS**

3.2.5 Ramp up from 1-Year to 10-year Current Profiles (m/s) at 800 m Level NE Direction

Profiles	1	2	3	4	5	6	7	8	9	10	11	12
Duration (Hours)	0-6	6-12	12-18	18-24	24-30	30-36	36-42	42-48	48-54	54-60	60-66	66-72
Depth (m)	1-year											10-year
50	0.75	0.76	0.77	0.78	0.79	0.80	0.82	0.83	0.84	0.85	0.86	0.87
100	0.65	0.66	0.67	0.69	0.70	0.71	0.72	0.73	0.74	0.76	0.77	0.78
150	0.59	0.60	0.62	0.63	0.64	0.65	0.67	0.68	0.69	0.70	0.72	0.73
200	0.66	0.67	0.69	0.70	0.71	0.72	0.74	0.75	0.76	0.77	0.79	0.80
250	0.50	0.51	0.53	0.54	0.55	0.56	0.58	0.59	0.60	0.61	0.63	0.64
300	0.43	0.44	0.46	0.47	0.48	0.49	0.51	0.52	0.53	0.54	0.56	0.57
350	0.46	0.47	0.49	0.50	0.51	0.53	0.54	0.56	0.57	0.58	0.60	0.61
800	0.30	0.31	0.32	0.33	0.34	0.35	0.35	0.36	0.37	0.38	0.39	0.40
1200	0.17	0.18	0.19	0.19	0.20	0.21	0.22	0.23	0.24	0.24	0.25	0.26
1600	0.21	0.21	0.22	0.22	0.22	0.23	0.23	0.24	0.24	0.24	0.25	0.25
1800	0.12	0.12	0.13	0.13	0.13	0.13	0.14	0.14	0.14	0.14	0.15	0.15
2150	0.11	0.11	0.12	0.12	0.12	0.13	0.13	0.14	0.14	0.14	0.15	0.15
2200	0.11	0.11	0.12	0.12	0.12	0.13	0.13	0.14	0.14	0.14	0.15	0.15
# of days ramp up:	3.00											

SOURCE: PETROBRAS Propriety Metocean Data

3.2.6 Ramp down from 10-Year to 1-year Current Profiles (m/s) at 800 m Level NE Direction

Profiles	12	13	14	15	16	17	18	19
Duration (Hours)	66-72	72-78	78-84	84-90	90-96	96-102	102-108	108-114
Depth (m)	10-year							1-year
50	0.87	0.85	0.84	0.82	0.80	0.78	0.77	0.75
100	0.78	0.76	0.74	0.72	0.71	0.69	0.67	0.65
150	0.73	0.71	0.69	0.67	0.65	0.63	0.61	0.59
200	0.80	0.78	0.76	0.74	0.72	0.70	0.68	0.66
250	0.64	0.62	0.60	0.58	0.56	0.54	0.52	0.50
300	0.57	0.55	0.53	0.51	0.49	0.47	0.45	0.43
350	0.61	0.59	0.57	0.55	0.52	0.50	0.48	0.46
800	0.40	0.39	0.37	0.36	0.34	0.33	0.31	0.30
1200	0.26	0.25	0.23	0.22	0.21	0.20	0.18	0.17
1600	0.25	0.24	0.24	0.23	0.23	0.22	0.22	0.21
1800	0.15	0.15	0.14	0.14	0.13	0.13	0.12	0.12
2150	0.15	0.14	0.14	0.13	0.13	0.12	0.12	0.11
2200	0.15	0.14	0.14	0.13	0.13	0.12	0.12	0.11
# of days ramp down:	1.75							

SOURCE: PETROBRAS Propriety Metocean Data



TECHNICAL REPORT

No.: **I-RL-3A00.00-1000-941-PPC-001 rev.A**

Project: **SANTOS BASIN NORTHERN PRE-SALT FIELDS**

Sheet: **52 of 89**

Title: **DURATION OF EXTREME CURRENT PROFILES AND CLUSTERS OF SIMULTANEOUS METOCEAN CONDITIONS**

3.2.7 Ramp up from 1-Year to 100-year Current Profiles (m/s) at 800 m Level NE Direction

Profiles	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Duration (Hours)	0-6	6-12	12-18	18-24	24-30	30-36	36-42	42-48	48-54	54-60	60-66	66-72	72-78	78-84	84-90	90-96
Depth (m)	1-year															100-year
50	0.75	0.77	0.78	0.80	0.81	0.83	0.84	0.86	0.87	0.89	0.90	0.92	0.93	0.95	0.96	0.98
100	0.65	0.67	0.68	0.70	0.71	0.73	0.75	0.76	0.78	0.79	0.81	0.83	0.84	0.86	0.87	0.89
150	0.59	0.61	0.62	0.64	0.66	0.68	0.69	0.71	0.73	0.75	0.76	0.78	0.80	0.82	0.83	0.85
200	0.66	0.68	0.69	0.71	0.73	0.75	0.76	0.78	0.80	0.82	0.83	0.85	0.87	0.89	0.90	0.92
250	0.50	0.52	0.53	0.55	0.57	0.59	0.60	0.62	0.64	0.66	0.67	0.69	0.71	0.73	0.74	0.76
300	0.43	0.45	0.46	0.48	0.50	0.52	0.53	0.55	0.57	0.59	0.60	0.62	0.64	0.66	0.67	0.69
350	0.46	0.48	0.49	0.51	0.53	0.55	0.56	0.58	0.60	0.62	0.63	0.65	0.67	0.69	0.70	0.72
800	0.30	0.31	0.32	0.34	0.35	0.36	0.37	0.38	0.40	0.41	0.42	0.43	0.44	0.46	0.47	0.48
1200	0.17	0.18	0.19	0.20	0.21	0.22	0.23	0.24	0.26	0.27	0.28	0.29	0.30	0.31	0.32	0.33
1600	0.21	0.21	0.22	0.22	0.23	0.23	0.24	0.24	0.25	0.25	0.26	0.26	0.27	0.27	0.28	0.28
1800	0.12	0.12	0.13	0.13	0.14	0.14	0.15	0.15	0.16	0.16	0.17	0.17	0.18	0.18	0.19	0.19
2150	0.11	0.11	0.12	0.12	0.13	0.13	0.14	0.14	0.15	0.15	0.16	0.16	0.17	0.17	0.18	0.18
2200	0.11	0.12	0.12	0.13	0.13	0.14	0.14	0.15	0.15	0.16	0.16	0.17	0.17	0.18	0.18	0.19

of days ramp up: 4.00

SOURCE: PETROBRAS Propriety Metocean Data

3.2.8 Ramp down from 100-Year to 1-year Current Profiles (m/s) at 800 m Level NE Direction

Profiles	16	17	18	19	20	21	22	23	24	25	26
Duration (Hours)	90-96	96-102	102-108	108-114	114-120	120-126	126-132	132-138	138-144	144-150	150-156
Depth (m)	100-year										1-year
50	0.98	0.96	0.93	0.91	0.89	0.87	0.84	0.82	0.80	0.77	0.75
100	0.89	0.87	0.84	0.82	0.79	0.77	0.75	0.72	0.70	0.67	0.65
150	0.85	0.82	0.80	0.77	0.75	0.72	0.69	0.67	0.64	0.62	0.59
200	0.92	0.89	0.87	0.84	0.82	0.79	0.76	0.74	0.71	0.69	0.66
250	0.76	0.73	0.71	0.68	0.66	0.63	0.60	0.58	0.55	0.53	0.50
300	0.69	0.66	0.64	0.61	0.59	0.56	0.53	0.51	0.48	0.46	0.43
350	0.72	0.69	0.67	0.64	0.62	0.59	0.56	0.54	0.51	0.49	0.46
800	0.48	0.46	0.44	0.43	0.41	0.39	0.37	0.35	0.34	0.32	0.30
1200	0.33	0.31	0.30	0.28	0.27	0.25	0.23	0.22	0.20	0.19	0.17
1600	0.28	0.27	0.27	0.26	0.25	0.25	0.24	0.23	0.22	0.22	0.21
1800	0.19	0.18	0.18	0.17	0.16	0.16	0.15	0.14	0.13	0.13	0.12
2150	0.18	0.17	0.17	0.16	0.15	0.15	0.14	0.13	0.12	0.12	0.11
2200	0.19	0.18	0.17	0.17	0.16	0.15	0.14	0.13	0.13	0.12	0.11

of days ramp down: 2.5

SOURCE: PETROBRAS Propriety Metocean Data

3.2.9 Ramp up from 1-Year to 10-year Current Profiles (m/s) at 800 m Level E Direction

Profiles	1	2	3	4	5
Duration (Hours)	0-6	6-12	12-18	18-24	24-30
Depth (m)	1-year				10-year
50	0.52	0.53	0.55	0.56	0.57
100	0.46	0.47	0.49	0.50	0.51
150	0.49	0.50	0.52	0.53	0.54
200	0.47	0.48	0.50	0.51	0.52
250	0.43	0.44	0.45	0.46	0.47
300	0.35	0.36	0.38	0.39	0.40
350	0.28	0.29	0.30	0.31	0.32
800	0.35	0.36	0.37	0.37	0.38
1200	0.18	0.20	0.21	0.23	0.24
1600	0.15	0.16	0.18	0.19	0.20
1800	0.21	0.22	0.23	0.23	0.24
2150	0.16	0.17	0.18	0.19	0.20
2200	0.08	0.09	0.09	0.10	0.10
# of days ramp up:	1.25				

SOURCE: PETROBRAS Propriety Metocean Data

3.2.10 Ramp down from 10-Year to 1-year Current Profiles (m/s) at 800 m Level E Direction

Profiles	5	6	7
Duration (Hours)	24-30	30-36	36-42
Depth (m)	10-year		1-year
50	0.57	0.55	0.52
100	0.51	0.49	0.46
150	0.54	0.52	0.49
200	0.52	0.50	0.47
250	0.47	0.45	0.43
300	0.40	0.38	0.35
350	0.32	0.30	0.28
800	0.38	0.37	0.35
1200	0.24	0.21	0.18
1600	0.20	0.18	0.15
1800	0.24	0.23	0.21
2150	0.20	0.18	0.16
2200	0.10	0.09	0.08
# of days ramp down:	0.50		

SOURCE: PETROBRAS Propriety Metocean Data

3.2.11 Ramp up from 1-Year to 100-year Current Profiles (m/s) at 800 m Level E Direction

Profiles	1	2	3	4	5	6
Duration (Hours)	0-6	6-12	12-18	18-24	24-30	30-36
Depth (m)	1-year					100-year
50	0.52	0.54	0.56	0.57	0.59	0.61
100	0.46	0.48	0.50	0.51	0.53	0.55
150	0.49	0.51	0.53	0.54	0.56	0.58
200	0.47	0.49	0.50	0.52	0.53	0.55
250	0.43	0.45	0.46	0.48	0.49	0.51
300	0.35	0.37	0.38	0.40	0.41	0.43
350	0.28	0.29	0.31	0.32	0.34	0.35
800	0.35	0.36	0.37	0.38	0.39	0.40
1200	0.18	0.20	0.22	0.25	0.27	0.29
1600	0.15	0.17	0.19	0.20	0.22	0.24
1800	0.21	0.22	0.24	0.25	0.27	0.28
2150	0.16	0.17	0.18	0.20	0.21	0.22
2200	0.08	0.09	0.09	0.10	0.10	0.11
# of days ramp up:	1.50					

SOURCE: PETROBRAS Propriety Metocean Data

3.2.12 Ramp down from 100-Year to 1-year Current Profiles (m/s) at 800 m Level E Direction

Profiles	6	7	8	9
Duration (Hours)	30-36	36-40	40-46	46-52
Depth (m)	100-year			1-year
50	0.61	0.58	0.55	0.52
100	0.55	0.52	0.49	0.46
150	0.58	0.55	0.52	0.49
200	0.55	0.52	0.50	0.47
250	0.51	0.48	0.46	0.43
300	0.43	0.40	0.38	0.35
350	0.35	0.33	0.30	0.28
800	0.40	0.38	0.37	0.35
1200	0.29	0.25	0.22	0.18
1600	0.24	0.21	0.18	0.15
1800	0.28	0.26	0.23	0.21
2150	0.22	0.20	0.18	0.16
2200	0.11	0.10	0.09	0.08
# of days ramp down:	0.75			

SOURCE: PETROBRAS Propriety Metocean Data

3.2.13 Ramp up from 1-Year to 10-year Current Profiles (m/s) at 800 m Level SE Direction

Profiles	1	2	3	4	5
Duration (Hours)	0-6	6-12	12-18	18-24	24-30
Depth (m)	1-year				10-year
50	0.48	0.49	0.51	0.52	0.53
100	0.57	0.58	0.60	0.61	0.62
150	0.46	0.48	0.49	0.51	0.52
200	0.31	0.32	0.34	0.35	0.36
250	0.32	0.34	0.35	0.37	0.38
300	0.32	0.33	0.35	0.36	0.37
350	0.25	0.27	0.28	0.30	0.31
800	0.35	0.36	0.37	0.37	0.38
1200	0.23	0.24	0.24	0.25	0.25
1600	0.29	0.30	0.31	0.32	0.33
1800	0.26	0.28	0.29	0.31	0.32
2150	0.22	0.24	0.25	0.27	0.28
2200	0.20	0.22	0.23	0.25	0.26
# of days ramp up:					1.25

SOURCE: PETROBRAS Propriety Metocean Data

3.2.14 Ramp down from 10-Year to 1-year Current Profiles (m/s) at 800 m Level SE Direction

Profiles	5	6	7
Duration (Hours)	24-30	30-36	36-42
Depth (m)	10-year		1-year
50	0.53	0.51	0.48
100	0.62	0.60	0.57
150	0.52	0.49	0.46
200	0.36	0.34	0.31
250	0.38	0.35	0.32
300	0.37	0.35	0.32
350	0.31	0.28	0.25
800	0.38	0.37	0.35
1200	0.25	0.24	0.23
1600	0.33	0.31	0.29
1800	0.32	0.29	0.26
2150	0.28	0.25	0.22
2200	0.26	0.23	0.20
# of days ramp down:			0.50

SOURCE: PETROBRAS Propriety Metocean Data

3.2.15 Ramp up from 1-Year to 100-year Current Profiles (m/s) at 800 m Level SE Direction

Profiles	1	2	3	4	5	6	7
Duration (Hours)	0-6	6-12	12-18	18-24	24-30	30-36	36-42
Depth (m)	1-year						100-year
50	0.48	0.50	0.51	0.53	0.54	0.56	0.57
100	0.57	0.59	0.60	0.62	0.64	0.65	0.67
150	0.46	0.48	0.50	0.52	0.53	0.55	0.57
200	0.31	0.33	0.34	0.36	0.38	0.39	0.41
250	0.32	0.34	0.36	0.38	0.39	0.41	0.43
300	0.32	0.34	0.35	0.37	0.39	0.40	0.42
350	0.25	0.27	0.28	0.30	0.32	0.33	0.35
800	0.35	0.36	0.37	0.38	0.39	0.40	0.41
1200	0.23	0.24	0.24	0.25	0.25	0.26	0.26
1600	0.29	0.30	0.31	0.33	0.34	0.35	0.36
1800	0.26	0.28	0.30	0.32	0.33	0.35	0.37
2150	0.22	0.24	0.26	0.28	0.30	0.32	0.34
2200	0.20	0.22	0.24	0.26	0.28	0.30	0.32
# of days ramp up:	1.75						

SOURCE: PETROBRAS Propriety Metocean Data

3.2.16 Ramp down from 100-Year to 1-year Current Profiles (m/s) at 800 m Level SE Direction

Profiles	7	8	9	10	11
Duration (Hours)	36-42	42-48	48-54	54-60	60-66
Depth (m)	100-year				1-year
50	0.57	0.55	0.53	0.50	0.48
100	0.67	0.65	0.62	0.60	0.57
150	0.57	0.54	0.52	0.49	0.46
200	0.41	0.39	0.36	0.34	0.31
250	0.43	0.40	0.38	0.35	0.32
300	0.42	0.40	0.37	0.35	0.32
350	0.35	0.33	0.30	0.28	0.25
800	0.41	0.40	0.38	0.37	0.35
1200	0.26	0.25	0.25	0.24	0.23
1600	0.36	0.34	0.33	0.31	0.29
1800	0.37	0.34	0.32	0.29	0.26
2150	0.34	0.31	0.28	0.25	0.22
2200	0.32	0.29	0.26	0.23	0.20
# of days ramp down:	1.00				

SOURCE: PETROBRAS Propriety Metocean Data

3.2.17 Ramp up from 1-Year to 10-year Current Profiles (m/s) at 800 m Level S Direction

Profiles	1	2	3	4	5
Duration (Hours)	0-6	6-12	12-18	18-24	24-30
Depth (m)	1-year				10-year
50	0.92	0.95	0.97	1.00	1.02
100	0.88	0.91	0.93	0.96	0.98
150	0.74	0.77	0.80	0.82	0.85
200	0.63	0.66	0.68	0.71	0.73
250	0.61	0.64	0.67	0.69	0.72
300	0.51	0.54	0.56	0.59	0.61
350	0.51	0.54	0.56	0.59	0.61
800	0.49	0.51	0.52	0.54	0.55
1200	0.17	0.18	0.20	0.21	0.22
1600	0.11	0.12	0.13	0.14	0.15
1800	0.13	0.14	0.16	0.17	0.18
2150	0.20	0.21	0.22	0.23	0.24
2200	0.06	0.07	0.09	0.10	0.11
# of days ramp up:	1.25				

SOURCE: PETROBRAS Propriety Metocean Data

3.2.18 Ramp down from 10-Year to 1-year Current Profiles (m/s) at 800 m Level S Direction

Profiles	5	6	7	8
Duration (Hours)	24-30	30-36	36-42	42-48
Depth (m)	10-year			1-year
50	1.02	0.99	0.95	0.92
100	0.98	0.95	0.91	0.88
150	0.85	0.81	0.78	0.74
200	0.73	0.70	0.66	0.63
250	0.72	0.68	0.65	0.61
300	0.61	0.58	0.54	0.51
350	0.61	0.58	0.54	0.51
800	0.55	0.53	0.51	0.49
1200	0.22	0.20	0.19	0.17
1600	0.15	0.14	0.12	0.11
1800	0.18	0.16	0.15	0.13
2150	0.24	0.23	0.21	0.20
2200	0.14	0.11	0.09	0.06
# of days ramp down:	0.75			

SOURCE: PETROBRAS Propriety Metocean Data

3.2.19 Ramp up from 1-Year to 100-year Current Profiles (m/s) at 800 m Level S Direction

Profiles	1	2	3	4	5	6	7	8
Duration (Hours)	0-6	6-12	12-18	18-24	24-30	30-36	36-42	42-48
Depth (m)	1-year							100-year
50	0.92	0.95	0.97	1.00	1.02	1.05	1.07	1.10
100	0.88	0.91	0.93	0.96	0.98	1.01	1.03	1.06
150	0.74	0.77	0.79	0.82	0.85	0.88	0.90	0.93
200	0.63	0.66	0.68	0.71	0.73	0.76	0.78	0.81
250	0.61	0.64	0.66	0.69	0.71	0.74	0.76	0.79
300	0.51	0.53	0.56	0.58	0.61	0.63	0.66	0.68
350	0.51	0.53	0.56	0.58	0.61	0.63	0.66	0.68
800	0.49	0.51	0.52	0.54	0.55	0.57	0.58	0.60
1200	0.17	0.18	0.20	0.21	0.22	0.23	0.25	0.26
1600	0.11	0.12	0.13	0.14	0.15	0.16	0.17	0.18
1800	0.13	0.14	0.15	0.16	0.18	0.19	0.20	0.21
2150	0.20	0.21	0.22	0.23	0.25	0.26	0.27	0.28
2200	0.06	0.07	0.08	0.09	0.11	0.12	0.13	0.14
# of days ramp up:	2.00							

SOURCE: PETROBRAS Propriety Metocean Data

3.2.20 Ramp down from 100-Year to 1-year Current Profiles (m/s) at 800 m Level S Direction

Profiles	8	9	10	11	12
Duration (Hours)	42-48	48-54	54-60	60-66	66-72
Depth (m)	100-year				1-year
50	1.10	1.06	1.01	0.97	0.92
100	1.06	1.02	0.97	0.93	0.88
150	0.93	0.88	0.84	0.79	0.74
200	0.81	0.77	0.72	0.68	0.63
250	0.79	0.75	0.70	0.66	0.61
300	0.68	0.64	0.60	0.55	0.51
350	0.68	0.64	0.60	0.55	0.51
800	0.60	0.57	0.55	0.52	0.49
1200	0.26	0.24	0.22	0.19	0.17
1600	0.18	0.16	0.15	0.13	0.11
1800	0.21	0.19	0.17	0.15	0.13
2150	0.28	0.26	0.24	0.22	0.20
2200	0.14	0.12	0.10	0.08	0.06
# of days ramp down:	1.00				

SOURCE: PETROBRAS Propriety Metocean Data



3.2.21 Ramp up from 1-Year to 10-year Current Profiles (m/s) at 800 m Level SW Direction

Profiles	1	2	3	4	5	6	7	8	9
Duration (Hours)	0-6	6-12	12-18	18-24	24-30	30-36	36-42	42-48	48-54
Depth (m)	1-year								10-year
50	0.97	0.99	1.00	1.02	1.03	1.05	1.06	1.08	1.09
100	0.99	1.00	1.02	1.03	1.05	1.06	1.07	1.09	1.10
150	0.95	0.97	0.98	1.00	1.01	1.03	1.04	1.06	1.07
200	0.80	0.82	0.83	0.85	0.86	0.88	0.89	0.91	0.92
250	0.75	0.77	0.78	0.80	0.81	0.83	0.84	0.86	0.87
300	0.71	0.73	0.74	0.76	0.77	0.79	0.80	0.82	0.83
350	0.58	0.60	0.61	0.63	0.64	0.66	0.67	0.69	0.70
800	0.35	0.36	0.37	0.38	0.39	0.40	0.41	0.42	0.43
1200	0.27	0.28	0.29	0.29	0.30	0.31	0.32	0.32	0.33
1600	0.19	0.20	0.20	0.21	0.21	0.22	0.22	0.23	0.23
1800	0.10	0.10	0.11	0.11	0.11	0.11	0.12	0.12	0.12
2150	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
2200	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
# of days ramp up:		2.25							

SOURCE: PETROBRAS Propriety Metocean Data

3.2.22 Ramp down from 10-Year to 1-year Current Profiles (m/s) at 800 m Level SW Direction

Profiles	9	10	11	12	13	14
Duration (Hours)	48-54	54-60	60-66	66-72	72-78	78-84
Depth (m)	10-year					1-year
50	1.09	1.07	1.04	1.02	0.99	0.97
100	1.10	1.08	1.06	1.03	1.01	0.99
150	1.07	1.05	1.02	1.00	0.97	0.95
200	0.92	0.90	0.87	0.85	0.82	0.80
250	0.87	0.85	0.82	0.80	0.77	0.75
300	0.83	0.81	0.78	0.76	0.73	0.71
350	0.70	0.68	0.65	0.63	0.60	0.58
800	0.43	0.41	0.40	0.38	0.37	0.35
1200	0.33	0.32	0.31	0.29	0.28	0.27
1600	0.23	0.22	0.21	0.21	0.20	0.19
1800	0.12	0.12	0.11	0.11	0.10	0.10
2150	0.12	0.12	0.12	0.12	0.12	0.12
2200	0.11	0.11	0.11	0.11	0.11	0.11
# of days ramp down:		1.25				

SOURCE: PETROBRAS Propriety Metocean Data



TECHNICAL REPORT

No.: **I-RL-3A00.00-1000-941-PPC-001 rev.A**

Project: **SANTOS BASIN NORTHERN PRE-SALT FIELDS**

Sheet: **60 of 89**

Title: **DURATION OF EXTREME CURRENT PROFILES AND CLUSTERS OF SIMULTANEOUS METOCEAN CONDITIONS**

3.2.23 Ramp up from 1-Year to 100-year Current Profiles (m/s) at 800 m Level SW Direction

Profiles	1	2	3	4	5	6	7	8	9	10	11	12	13
Duration (Hours)	0-6	6-12	12-18	18-24	24-30	30-36	36-42	42-48	48-54	54-60	60-66	66-72	72-78
Depth (m)	1-year												100-year
50	0.97	0.99	1.01	1.02	1.04	1.06	1.08	1.09	1.11	1.13	1.15	1.16	1.18
100	0.99	1.01	1.03	1.04	1.06	1.08	1.10	1.11	1.13	1.15	1.17	1.18	1.20
150	0.95	0.97	0.99	1.00	1.02	1.04	1.06	1.07	1.09	1.11	1.13	1.14	1.16
200	0.80	0.82	0.84	0.86	0.87	0.89	0.91	0.93	0.95	0.97	0.98	1.00	1.02
250	0.75	0.77	0.79	0.81	0.82	0.84	0.86	0.88	0.90	0.92	0.93	0.95	0.97
300	0.71	0.73	0.75	0.76	0.78	0.80	0.82	0.83	0.85	0.87	0.89	0.90	0.92
350	0.58	0.60	0.62	0.63	0.65	0.67	0.69	0.70	0.72	0.74	0.76	0.77	0.79
800	0.35	0.36	0.38	0.39	0.40	0.41	0.43	0.44	0.45	0.46	0.48	0.49	0.50
1200	0.27	0.28	0.29	0.30	0.31	0.32	0.33	0.33	0.34	0.35	0.36	0.37	0.38
1600	0.19	0.20	0.20	0.21	0.22	0.22	0.23	0.24	0.24	0.25	0.26	0.26	0.27
1800	0.10	0.10	0.11	0.11	0.11	0.12	0.12	0.12	0.13	0.13	0.13	0.14	0.14
2150	0.12	0.12	0.12	0.13	0.13	0.13	0.13	0.13	0.13	0.14	0.14	0.14	0.14
2200	0.11	0.11	0.11	0.12	0.12	0.12	0.12	0.12	0.12	0.13	0.13	0.13	0.13
# of days ramp up:	3.25												

SOURCE: PETROBRAS Propriety Metocean Data

3.2.24 Ramp down from 100-Year to 1-year Current Profiles (m/s) at 800 m Level SW Direction

Profiles	13	14	15	16	17	18	19	20	21
Duration (Hours)	72-78	78-84	84-90	90-96	96-102	102-108	108-114	114-120	120-126
Depth (m)	100-year								1-year
50	1.18	1.15	1.13	1.10	1.08	1.05	1.02	1.00	0.97
100	1.20	1.17	1.15	1.12	1.10	1.07	1.04	1.02	0.99
150	1.16	1.13	1.11	1.08	1.06	1.03	1.00	0.98	0.95
200	1.02	0.99	0.97	0.94	0.91	0.88	0.86	0.83	0.80
250	0.97	0.94	0.92	0.89	0.86	0.83	0.81	0.78	0.75
300	0.92	0.89	0.87	0.84	0.82	0.79	0.76	0.74	0.71
350	0.79	0.76	0.74	0.71	0.69	0.66	0.63	0.61	0.58
800	0.50	0.48	0.46	0.44	0.43	0.41	0.39	0.37	0.35
1200	0.38	0.37	0.35	0.34	0.33	0.31	0.30	0.28	0.27
1600	0.27	0.26	0.25	0.24	0.23	0.22	0.21	0.20	0.19
1800	0.14	0.14	0.13	0.13	0.12	0.12	0.11	0.11	0.10
2150	0.14	0.14	0.14	0.13	0.13	0.13	0.13	0.12	0.12
2200	0.13	0.13	0.13	0.12	0.12	0.12	0.12	0.11	0.11
# of days ramp down:	2.00								

SOURCE: PETROBRAS Propriety Metocean Data

3.2.25 Ramp up from 1-Year to 10-year Current Profiles (m/s) at 800 m Level W Direction

Profiles	1	2	3	4	5	6	7
Duration (Hours)	0-6	6-12	12-18	18-24	24-30	30-36	36-42
Depth (m)	1-year						10-year
50	0.94	0.96	0.98	1.00	1.02	1.04	1.06
100	0.93	0.95	0.97	0.99	1.01	1.03	1.05
150	0.89	0.91	0.93	0.95	0.97	0.99	1.01
200	0.75	0.77	0.79	0.81	0.83	0.85	0.87
250	0.75	0.77	0.79	0.81	0.83	0.85	0.87
300	0.60	0.62	0.64	0.66	0.68	0.70	0.72
350	0.54	0.56	0.58	0.60	0.62	0.64	0.66
800	0.30	0.31	0.32	0.33	0.33	0.34	0.35
1200	0.14	0.14	0.15	0.15	0.15	0.16	0.16
1600	0.15	0.16	0.16	0.17	0.17	0.18	0.18
1800	0.10	0.11	0.11	0.12	0.12	0.13	0.13
2150	0.17	0.18	0.18	0.19	0.19	0.20	0.20
2200	0.08	0.09	0.09	0.10	0.10	0.11	0.11
# of days ramp up:	1.75						

SOURCE: PETROBRAS Propriety Metocean Data

3.2.26 Ramp down from 10-Year to 1-year Current Profiles (m/s) at 800 m Level W Direction

Profiles	7	8	9	10	11
Duration (Hours)	36-42	42-48	48-54	54-60	60-66
Depth (m)	10-year				1-year
50	1.06	1.03	1.00	0.97	0.94
100	1.05	1.02	0.99	0.96	0.93
150	1.01	0.98	0.95	0.92	0.89
200	0.87	0.84	0.81	0.78	0.75
250	0.87	0.84	0.81	0.78	0.75
300	0.72	0.69	0.66	0.63	0.60
350	0.66	0.63	0.60	0.57	0.54
800	0.35	0.34	0.33	0.31	0.30
1200	0.16	0.16	0.15	0.15	0.14
1600	0.18	0.17	0.17	0.16	0.15
1800	0.13	0.12	0.12	0.11	0.10
2150	0.20	0.19	0.19	0.18	0.17
2200	0.11	0.10	0.10	0.09	0.08
# of days ramp down:	1.00				

SOURCE: PETROBRAS Propriety Metocean Data



TECHNICAL REPORT

No.: **I-RL-3A00.00-1000-941-PPC-001 rev.A**

Project: **SANTOS BASIN NORTHERN PRE-SALT FIELDS**

Sheet: **62 of 89**

Title: **DURATION OF EXTREME CURRENT PROFILES AND CLUSTERS OF SIMULTANEOUS METOCEAN CONDITIONS**

3.2.27 Ramp up from 1-Year to 100-year Current Profiles (m/s) at 800 m Level W Direction

Profiles	1	2	3	4	5	6	7	8	9	10	11	12
Duration (Hours)	0-6	6-12	12-18	18-24	24-30	30-36	36-42	42-48	48-54	54-60	60-66	66-72
Depth (m)	1-year											100-year
50	0.94	0.96	0.98	1.00	1.02	1.04	1.06	1.08	1.10	1.12	1.14	1.16
100	0.93	0.95	0.97	0.99	1.01	1.03	1.05	1.07	1.09	1.11	1.13	1.15
150	0.89	0.91	0.93	0.95	0.97	0.99	1.01	1.03	1.05	1.07	1.09	1.11
200	0.75	0.77	0.79	0.81	0.83	0.85	0.87	0.89	0.91	0.93	0.95	0.97
250	0.75	0.77	0.79	0.81	0.83	0.85	0.87	0.89	0.91	0.93	0.95	0.97
300	0.60	0.62	0.64	0.66	0.68	0.70	0.72	0.74	0.76	0.78	0.80	0.82
350	0.54	0.56	0.58	0.60	0.62	0.64	0.65	0.67	0.69	0.71	0.73	0.75
800	0.30	0.31	0.32	0.33	0.34	0.35	0.35	0.36	0.37	0.38	0.39	0.40
1200	0.14	0.14	0.15	0.15	0.16	0.16	0.17	0.17	0.18	0.18	0.19	0.19
1600	0.15	0.15	0.16	0.16	0.17	0.17	0.18	0.18	0.19	0.19	0.20	0.20
1800	0.10	0.11	0.11	0.12	0.12	0.13	0.13	0.14	0.14	0.15	0.15	0.16
2150	0.17	0.18	0.18	0.19	0.19	0.20	0.20	0.21	0.21	0.22	0.22	0.23
2200	0.08	0.09	0.09	0.10	0.10	0.11	0.11	0.12	0.12	0.13	0.13	0.14
# of days ramp up:	3.00											

SOURCE: PETROBRAS Propriety Metocean Data

3.2.28 Ramp down from 100-Year to 1-year Current Profiles (m/s) at 800 m Level W Direction

Profiles	12	13	14	15	16	17	18	19
Duration (Hours)	66-72	72-78	78-84	84-90	90-96	96-102	102-108	108-114
Depth (m)	100-year							1-year
50	1.16	1.13	1.10	1.07	1.03	1.00	0.97	0.94
100	1.15	1.12	1.09	1.06	1.02	0.99	0.96	0.93
150	1.11	1.08	1.05	1.02	0.98	0.95	0.92	0.89
200	0.97	0.94	0.91	0.88	0.84	0.81	0.78	0.75
250	0.97	0.94	0.91	0.88	0.84	0.81	0.78	0.75
300	0.82	0.79	0.76	0.73	0.69	0.66	0.63	0.60
350	0.75	0.72	0.69	0.66	0.63	0.60	0.57	0.54
800	0.40	0.39	0.37	0.36	0.34	0.33	0.31	0.30
1200	0.19	0.18	0.18	0.17	0.16	0.15	0.15	0.14
1600	0.20	0.19	0.19	0.18	0.17	0.16	0.16	0.15
1800	0.16	0.15	0.14	0.13	0.13	0.12	0.11	0.10
2150	0.23	0.22	0.21	0.20	0.20	0.19	0.18	0.17
2200	0.14	0.13	0.12	0.11	0.11	0.10	0.09	0.08
# of days ramp down:	1.75							

SOURCE: PETROBRAS Propriety Metocean Data

3.2.29 Ramp up from 1-Year to 10-year Current Profiles (m/s) at 800 m Level NW Direction

Profiles	1	2	3	4	5	6	7
Duration (Hours)	0-6	6-12	12-18	18-24	24-30	30-36	36-42
Depth (m)	1-year						10-year
50	0.56	0.57	0.58	0.60	0.61	0.62	0.63
100	0.50	0.51	0.52	0.54	0.55	0.56	0.57
150	0.52	0.53	0.55	0.56	0.57	0.59	0.60
200	0.60	0.61	0.63	0.64	0.65	0.67	0.68
250	0.54	0.55	0.57	0.58	0.59	0.61	0.62
300	0.53	0.54	0.56	0.57	0.58	0.60	0.61
350	0.49	0.50	0.52	0.53	0.54	0.56	0.57
800	0.39	0.40	0.41	0.42	0.43	0.44	0.45
1200	0.28	0.29	0.30	0.32	0.33	0.34	0.35
1600	0.20	0.21	0.22	0.23	0.23	0.24	0.25
1800	0.18	0.19	0.19	0.20	0.20	0.21	0.21
2150	0.15	0.16	0.16	0.17	0.17	0.18	0.18
2200	0.17	0.18	0.18	0.19	0.20	0.20	0.21
# of days ramp up:	1.75						

SOURCE: PETROBRAS Propriety Metocean Data

3.2.30 Ramp down from 10-Year to 1-year Current Profiles (m/s) at 800 m Level NW Direction

Profiles	7	8	9	10	11
Duration (Hours)	36-42	42-48	48-54	54-60	60-66
Depth (m)	10-year				1-year
50	0.63	0.61	0.60	0.58	0.56
100	0.57	0.55	0.54	0.52	0.50
150	0.60	0.58	0.56	0.54	0.52
200	0.68	0.66	0.64	0.62	0.60
250	0.62	0.60	0.58	0.56	0.54
300	0.61	0.59	0.57	0.55	0.53
350	0.57	0.55	0.53	0.51	0.49
800	0.45	0.44	0.42	0.41	0.39
1200	0.35	0.33	0.32	0.30	0.28
1600	0.25	0.24	0.23	0.21	0.20
1800	0.21	0.20	0.20	0.19	0.18
2150	0.18	0.17	0.17	0.16	0.15
2200	0.21	0.20	0.19	0.18	0.17
# of days ramp down:	1.00				

SOURCE: PETROBRAS Propriety Metocean Data

3.2.31 Ramp up from 1-Year to 100-year Current Profiles (m/s) at 800 m Level NW Direction

Profiles	1	2	3	4	5	6	7	8	9	10
Duration (Hours)	0-6	6-12	12-18	18-24	24-30	30-36	36-42	42-48	48-54	54-60
Depth (m)	1-year									100-year
50	0.56	0.57	0.59	0.60	0.62	0.63	0.65	0.66	0.68	0.69
100	0.50	0.51	0.53	0.54	0.56	0.57	0.59	0.60	0.62	0.63
150	0.52	0.54	0.55	0.57	0.58	0.60	0.61	0.63	0.64	0.66
200	0.60	0.62	0.63	0.65	0.66	0.68	0.69	0.71	0.72	0.74
250	0.54	0.56	0.57	0.59	0.61	0.62	0.64	0.66	0.67	0.69
300	0.53	0.55	0.56	0.58	0.60	0.61	0.63	0.65	0.66	0.68
350	0.49	0.51	0.52	0.54	0.55	0.57	0.58	0.60	0.61	0.63
800	0.39	0.40	0.41	0.43	0.44	0.45	0.46	0.48	0.49	0.50
1200	0.28	0.29	0.31	0.32	0.33	0.35	0.36	0.37	0.39	0.40
1600	0.20	0.21	0.22	0.23	0.24	0.25	0.26	0.27	0.28	0.29
1800	0.18	0.19	0.19	0.20	0.21	0.21	0.22	0.23	0.23	0.24
2150	0.15	0.16	0.16	0.17	0.18	0.18	0.19	0.20	0.20	0.21
2200	0.17	0.18	0.19	0.19	0.20	0.21	0.22	0.22	0.23	0.24
# of days ramp up:	2.50									

SOURCE: PETROBRAS Propriety Metocean Data

3.2.32 Ramp down from 100-Year to 1-year Current Profiles (m/s) at 800 m Level NW Direction

Profiles	10	11	12	13	14	15	16
Duration (Hours)	54-60	60-66	66-72	72-78	78-84	84-90	90-96
Depth (m)	100-year						1-year
50	0.69	0.67	0.65	0.63	0.60	0.58	0.56
100	0.63	0.61	0.59	0.57	0.54	0.52	0.50
150	0.66	0.64	0.61	0.59	0.57	0.54	0.52
200	0.74	0.72	0.69	0.67	0.65	0.62	0.60
250	0.69	0.67	0.64	0.62	0.59	0.57	0.54
300	0.68	0.66	0.63	0.61	0.58	0.56	0.53
350	0.63	0.61	0.58	0.56	0.54	0.51	0.49
800	0.50	0.48	0.46	0.45	0.43	0.41	0.39
1200	0.40	0.38	0.36	0.34	0.32	0.30	0.28
1600	0.29	0.28	0.26	0.25	0.23	0.22	0.20
1800	0.24	0.23	0.22	0.21	0.20	0.19	0.18
2150	0.21	0.20	0.19	0.18	0.17	0.16	0.15
2200	0.24	0.23	0.22	0.21	0.19	0.18	0.17
# of days ramp down:	1.50						

SOURCE: PETROBRAS Propriety Metocean Data

4. CLUSTERS OF SIMULTANEOUS METOCEAN CONDITIONS

Simultaneous wind, wave and current conditions can be grouped into clusters of data with their relative frequency of occurrence to reduce the computing time necessary to evaluate all possible simultaneous metocean conditions. It is important to acknowledge that these clusters still keep all variability of original non-clustered data, it only reduces the size of datasets to be analysed.

Cluster	Name	Occurrence		Wave (Peak 1)			Wave (Peak 2)			Current		Wind		
		N	%	Hs	Tp	Dir	Is there?	Hs	Tp	Dir	Speed	Dir	Speed	Dir
797	O0001_N	2	5.265514E-05	1.66	7.4	349.2	Yes	1.04	5.25	232.8	0.33	272.9	7.14	214.1
965	O0002_N	1	2.632757E-05	1	4.2	349.2	Yes	0.9	7.3	87.9	0.39	349.4	8.11	344.9
745	O0003_N	8	2.106205E-04	2.2	6.31	352.8	Yes	1.65	8.75	76.4	0.48	175	11.44	339.4
884	O0004_N	1	2.632757E-05	2.26	6.7	353.2	Yes	2.06	8.7	56	0.37	245.2	9.68	341.2
1011	O0005_N	1	2.632757E-05	2.51	6.2	355.1	Yes	2.39	8.7	71.7	0.27	88.1	13.56	335
479	O0006_N	9	2.369481E-04	1.81	5.87	355.2	Yes	1.54	8.74	81.4	0.21	55.6	10.31	344.4
1113	O0007_N	2	5.265514E-05	1.42	5.2	357	Yes	1.18	7.85	85	0.32	17.8	10.04	342.4
740	O0008_N	10	2.632757E-04	1.43	5.1	358.5	Yes	1.33	9.38	106.3	0.25	142.5	9.33	345.6
931	O0009_N	1	2.632757E-05	2.03	8.7	1.1	Yes	1.68	6.8	251.1	0.68	20.2	8.69	240.5
999	O0010_N	1	2.632757E-05	1.86	6.8	4.6	Yes	1.3	5.2	243.9	0.26	304.1	7.74	227.2
763	O0011_N	1	2.632757E-05	1.73	6.3	5	Yes	1.24	7.3	87.8	0.11	332.9	9.06	358
1186	O0012_N	1	2.632757E-05	3.19	8.3	9.2	Yes	1.91	8.8	74.7	0.21	187.3	12.34	356
709	O0013_N	6	1.579654E-04	1.55	5.68	10.1	Yes	1.14	7.83	73.5	0.19	319.3	9.57	355.2
590	O0014_N	4	1.053103E-04	2.78	6.98	10.9	Yes	2.04	11.35	104.5	0.33	239	12.27	357.5
820	O0015_NNE	1	2.632757E-05	1.96	11.4	11.4	Yes	1.21	8.9	226.2	0.03	355.9	9.54	203.1
802	O0016_NNE	2	5.265514E-05	1.71	7.4	12.6	Yes	0.78	7.1	234.7	0.17	246.8	7.63	196.1
407	O0017_NNE	6	1.579654E-04	1.8	7.83	13.1	No	0	0.9	277.3	0.35	277.5	4.5	344
546	O0018_NNE	2	5.265514E-05	2.21	6.3	13.4	Yes	2.02	10.75	102.1	0.13	300.6	10.7	356.1
299	O0019_NNE	4	1.053103E-04	1.43	6.4	16.8	Yes	0.97	4.83	252.6	0.46	13.7	7.8	220.3
362	O0020_NNE	3	7.898270E-05	1.72	8.13	18.3	Yes	0.89	7.3	142.1	0.35	194.5	6.45	126
991	O0021_NNE	1	2.632757E-05	2.83	9.9	18.5	Yes	1.59	7.2	248.7	0.11	219.6	9.34	207.4
731	O0022_NNE	2	5.265514E-05	1.6	6.7	19	Yes	1.1	4.5	248	0.54	308.8	7.78	230.5
215	O0023_NNE	23	6.055341E-04	2.59	6.78	19.3	Yes	2.19	11.85	126.1	0.38	145.6	11.84	5.2
190	O0024_NNE	39	1.026775E-03	1.54	5.45	20.1	Yes	1.3	8.79	103.4	0.27	112.3	8.94	8.3
747	O0025_NNE	1	2.632757E-05	2.39	9.4	21.5	Yes	0.85	4.5	241.2	0.52	187.3	6.39	206.7
426	O0026_NNE	3	7.898270E-05	4.13	8.63	22.3	No	NaN	NaN	NaN	0.9	73.8	14.48	8.6
635	O0027_NNE	5	1.316378E-04	1.35	7.38	23	Yes	0.39	2.44	247.4	0.27	340.8	4.11	241.8
304	O0028_NNE	20	5.265514E-04	2.21	6.21	23.3	Yes	1.68	10.2	121.1	0.43	227.7	10.35	9
1084	O0029_NNE	2	5.265514E-05	0.96	4.35	23.7	Yes	0.91	7.3	96.8	0.23	211	7.1	7.3
79	O0030_NNE	211	5.555117E-03	1.98	6.15	24.1	Yes	1.56	9.92	116.8	0.31	146.3	9.98	12.8
524	O0031_NNE	4	1.053103E-04	1.87	6.13	24.4	Yes	1.66	9.1	103	0.27	356.3	10.01	9.3
947	O0032_NNE	2	5.265514E-05	1.75	7.05	25.7	No	NaN	NaN	NaN	0.4	45.9	3.85	48.3
289	O0033_NNE	34	8.951373E-04	1.21	4.88	26.2	Yes	1.04	7.7	99.9	0.26	140	7.96	10.7
114	O0034_NNE	116	3.053998E-03	1.76	5.83	26.3	Yes	1.39	9.24	114.4	0.37	219.3	9.4	14
106	O0035_NNE	46	1.211068E-03	2.31	6.74	26.8	Yes	1.58	10.01	114.7	0.25	28.2	10.46	16.2
997	O0036_NNE	3	7.898270E-05	2.01	7.57	26.9	Yes	1.52	5.07	298.7	0.3	35.9	10.69	279.5
933	O0037_NNE	4	1.053103E-04	1.24	5.63	27.1	Yes	0.64	5.13	302	0.28	39.7	6.38	333.9
748	O0038_NNE	3	7.898270E-05	3.4	7.9	28	Yes	1.74	11.85	163.6	0.21	82	13.24	15.4
1090	O0039_NNE	1	2.632757E-05	1.6	5.1	28.2	Yes	1.51	10.3	133.9	0.41	133.8	12.1	5.9
465	O0040_NNE	18	4.738962E-04	2.95	7.34	29.2	Yes	2.02	11.72	145.8	0.23	26.9	12.11	17.2
864	O0041_NNE	1	2.632757E-05	3.2	8.7	29.3	No	NaN	NaN	NaN	0.32	40.1	6.89	11.8
113	O0042_NNE	134	3.527894E-03	2.38	6.86	29.9	Yes	1.44	9.95	124.9	0.36	142.9	10.77	19.2
587	O0043_NNE	7	1.842930E-04	1.04	4.43	30	Yes	0.97	8.01	126.2	0.24	21.9	7.7	11.8
86	O0044_NNE	258	6.792512E-03	1.38	5.22	30.1	Yes	1.14	8.59	109.4	0.33	236.4	8.24	17.6
538	O0045_NNE	6	1.579654E-04	2.71	7.45	32	Yes	1.42	9.07	160.3	0.34	51.7	11.93	23.7
754	O0046_NNE	7	1.842930E-04	1.81	6.93	32	Yes	0.67	9.4	130.7	0.34	225.1	9.48	26.1
120	O0047_NE	65	1.711292E-03	3.01	7.48	34.8	Yes	1.66	11.01	143	0.37	181.7	12.71	24.2



TECHNICAL REPORT

No.: **I-RL-3A00.00-1000-941-PPC-001 rev.A**

Project: **SANTOS BASIN NORTHERN PRE-SALT FIELDS**

Sheet: **66 of 89**

Title: **DURATION OF EXTREME CURRENT PROFILES AND CLUSTERS OF SIMULTANEOUS METEOCEAN CONDITIONS**

Cluster	Name	Occurrence		Wave (Peak 1)			Wave (Peak 2)			Current		Wind		
		N	%	Hs	Tp	Dir	Is there?	Hs	Tp	Dir	Speed	Dir	Speed	Dir
1041	O0048_NE	1	2.632757E-05	2.29	6.2	35.1	Yes	2.28	13.3	139	0.06	205.3	12.51	17
94	O0049_NE	22	5.792065E-04	1.6	6.48	35.7	Yes	0.88	7.94	108	0.28	55.2	8.65	25.9
597	O0050_NE	5	1.316378E-04	2.3	9.06	35.8	Yes	1.2	4.4	252.1	0.43	15.9	9.33	226.6
660	O0051_NE	3	7.898270E-05	2.58	6.63	35.8	Yes	2.33	11.6	138.1	0.19	330	11.64	20.9
238	O0052_NE	90	2.369481E-03	2.65	7.57	36	Yes	1.02	9.33	120.4	0.34	132.4	11.63	27.2
366	O0053_NE	21	5.528789E-04	1.31	5.15	36.4	Yes	1	7.69	115.2	0.24	40	7.68	21.6
610	O0054_NE	7	1.842930E-04	2.1	8.46	36.4	Yes	1.43	5.21	259.5	0.32	260.4	9.38	242
297	O0055_NE	19	5.002238E-04	1.71	5.54	36.7	Yes	1.52	10.78	146	0.35	226.8	9.46	25.8
138	O0056_NE	27	7.108443E-04	3.48	8.08	37.4	Yes	1.4	10.55	142.2	0.4	204.1	13.68	27.6
416	O0057_NE	5	1.316378E-04	1.14	6.36	38.4	Yes	0.78	5.95	24.7	0.27	194.8	6.97	346.1
99	O0058_NE	334	8.793408E-03	2.48	7.02	39.2	Yes	1.46	10.64	135.8	0.38	229	11.26	29.8
540	O0059_NE	2	5.265514E-05	1.57	7.95	39.3	No	NaN	NaN	NaN	0.14	268.9	4.7	53.3
830	O0060_NE	6	1.579654E-04	2.76	6.95	39.5	Yes	2.29	13.65	179.5	0.43	218.5	11.9	28.3
843	O0061_NE	3	7.898270E-05	1.92	6.73	40.4	Yes	1.04	8.8	125.6	0.35	78.5	9.46	36.1
780	O0062_NE	3	7.898270E-05	2.3	9.83	40.8	Yes	1.69	5.9	263.9	0.54	25.3	9.96	250.8
867	O0063_NE	1	2.632757E-05	2.74	9.8	40.9	Yes	2	7.5	297.3	0.12	94.5	10.6	281.4
97	O0064_NE	32	8.424822E-04	1.95	8.69	41	Yes	0.77	5.13	212.7	0.51	341.5	6.66	172.1
10	O0065_NE	130	3.422584E-03	3.49	8.52	41.5	Yes	0.83	10.21	137.6	0.48	205	13.51	33.6
900	O0066_NE	1	2.632757E-05	1.3	5.2	42	Yes	1.16	4.6	210.1	0.45	30.6	8.73	193
182	O0067_NE	53	1.395361E-03	1.56	5.57	42.2	Yes	1.19	9.59	131.2	0.26	344.9	8.75	31.8
968	O0068_NE	2	5.265514E-05	3.05	7.8	42.2	Yes	1.97	13.7	162.5	0.22	315.1	13.13	31.9
56	O0069_NE	392	1.032041E-02	1.81	6.42	43.3	Yes	0.98	9.32	134.3	0.29	306.8	9.38	35.6
688	O0070_NE	8	2.106205E-04	1.6	7.37	43.5	Yes	1.08	4.81	269	0.27	5.7	8.06	242.3
41	O0071_NE	812	2.137798E-02	1.55	5.91	44	Yes	0.88	8.81	131.8	0.37	244.8	8.65	35.8
87	O0072_NE	95	2.501119E-03	2.97	7.95	45.2	Yes	0.76	9.76	145.9	0.31	105.7	12.5	37.2
350	O0073_NE	21	5.528789E-04	4.15	9.01	45.3	Yes	1.16	9.18	104.9	0.43	202.5	15.37	36.6
1070	O0074_NE	1	2.632757E-05	1.5	6.6	45.3	No	0	3.3	200.7	0.2	66.2	4.26	188.3
1078	O0075_NE	1	2.632757E-05	1.46	8.9	45.7	No	NaN	NaN	NaN	0.72	248.3	4.54	93.9
44	O0076_NE	1051	2.767027E-02	1.86	6.37	45.8	Yes	1.01	9.6	139.9	0.38	200.2	9.63	37.4
16	O0077_NE	874	2.301029E-02	2.8	7.72	46.1	Yes	0.95	10.14	141.7	0.45	218.1	11.99	38.5
651	O0078_NE	3	7.898270E-05	3.16	10.17	46.1	No	NaN	NaN	NaN	0.43	280	8.07	34.6
265	O0079_NE	51	1.342706E-03	2.22	7.23	46.2	Yes	0.78	10.33	154.3	0.29	24.3	10.44	42.1
497	O0080_NE	28	7.371719E-04	2.04	7.54	46.4	Yes	0.83	10.35	158.6	0.34	213.8	9.61	41.6
574	O0081_NE	3	7.898270E-05	2.25	8.67	46.8	Yes	0.62	3.6	114.5	0.16	107.9	7.63	116.1
6	O0082_NE	1021	2.688045E-02	1.62	5.93	47.2	Yes	1.02	9.23	134.9	0.3	149.9	8.79	39.7
410	O0083_NE	10	2.632757E-04	1.89	8.03	47.2	Yes	0.52	7.05	81.9	0.3	131.9	5.99	34.6
714	O0084_NE	4	1.053103E-04	2.73	9.4	47.2	Yes	0.38	3.3	104.9	0.55	222.3	5.94	97.5
956	O0085_NE	2	5.265514E-05	2.66	9.45	48.6	Yes	1.02	4.35	302.3	0.24	33.8	6.96	287.8
928	O0086_NE	6	1.579654E-04	3.17	7.5	49.4	Yes	2.4	13.57	170.6	0.36	220.9	12.86	36.6
80	O0087_NE	38	1.000448E-03	3.1	8.32	49.7	Yes	0.86	9.2	140.8	0.4	260.7	12.28	37.2
527	O0088_NE	6	1.579654E-04	2.1	6.23	49.8	Yes	1.94	12.98	169.3	0.39	145.4	10.54	41.2
219	O0089_NE	34	8.951373E-04	2.27	6.83	50	Yes	1.17	11.59	154.1	0.3	18.1	10.9	41.2
1035	O0090_NE	1	2.632757E-05	2.64	8.5	50.3	No	NaN	NaN	NaN	0.37	35.1	7.83	352.7
13	O0091_NE	2163	5.694653E-02	2.16	6.95	50.4	Yes	0.87	9.73	146.7	0.39	210.3	10.41	42.5
1141	O0092_NE	1	2.632757E-05	1.71	12.3	50.5	No	NaN	NaN	NaN	0.28	198.1	7.43	128.5
267	O0093_NE	45	1.184741E-03	2.04	8.05	50.6	Yes	0.74	7.9	121.6	0.37	219.1	7.59	28.5
565	O0094_NE	3	7.898270E-05	2.25	8.37	50.7	Yes	1.66	5.7	214.9	0.39	17.3	9.81	197.5
518	O0095_NE	29	7.634995E-04	2.04	8.96	51	Yes	0.9	4.51	321.4	0.33	19.4	6.58	316.3
178	O0096_NE	65	1.711292E-03	1.19	4.76	51.1	Yes	1.02	8.51	137.8	0.38	244.8	7.86	39.6
613	O0097_NE	5	1.316378E-04	1.57	7.08	51.3	Yes	0.51	4.6	225.6	0.27	77.7	7.53	217.5



TECHNICAL REPORT

No.: **I-RL-3A00.00-1000-941-PPC-001 rev.A**

Project: **SANTOS BASIN NORTHERN PRE-SALT FIELDS**

Sheet: **67 of 89**

Title: **DURATION OF EXTREME CURRENT PROFILES AND CLUSTERS OF SIMULTANEOUS METEOCEAN CONDITIONS**

Cluster	Name	Occurrence		Wave (Peak 1)			Wave (Peak 2)			Current		Wind		
		N	%	Hs	Tp	Dir	Is there?	Hs	Tp	Dir	Speed	Dir	Speed	Dir
529	O0098_NE	5	1.316378E-04	1.71	5.62	51.5	Yes	1.64	12.04	161.9	0.32	167.1	9.2	39.4
404	O0099_NE	15	3.949135E-04	1.52	8	51.9	Yes	0.42	3.59	186.8	0.34	12.6	4.98	156.5
425	O0100_NE	6	1.579654E-04	2.09	6.22	52	Yes	1.86	10.5	125.3	0.25	358.8	10.59	40.1
52	O0101_NE	180	4.738962E-03	1.58	8	52.2	Yes	0.58	3.92	260.2	0.35	301.9	5.82	242.1
373	O0102_NE	42	1.105758E-03	2.16	7.82	52.4	Yes	0.93	7.34	66.3	0.32	153.7	8.52	11.6
702	O0103_NE	6	1.579654E-04	1.6	5.33	52.6	Yes	1.41	12.13	157.8	0.4	209.5	9.6	36.4
851	O0104_NE	2	5.265514E-05	1.51	8.45	52.6	Yes	0.38	3.4	281.5	0.48	275.2	4.86	332.5
147	O0105_NE	43	1.132085E-03	1.54	8.13	52.8	Yes	0.6	4.02	148.6	0.34	260.5	5.65	137.4
586	O0106_NE	3	7.898270E-05	1.73	11.77	53	Yes	1.07	4.5	224.1	0.2	85.9	8.37	199
944	O0107_NE	2	5.265514E-05	1.15	7.1	53.4	No	NaN	NaN	NaN	0.17	119.4	3.72	74.5
59	O0108_NE	120	3.159308E-03	1.8	8.03	53.6	Yes	0.85	4.69	267.8	0.33	52.2	7.18	245.4
902	O0109_NE	5	1.316378E-04	2	8.64	53.6	Yes	0.74	4.58	245.8	0.37	129.3	6.87	220.8
207	O0110_NE	114	3.001343E-03	1.97	8.39	54.1	Yes	0.97	4.9	4.9	0.28	358.8	6.33	22.7
500	O0111_NE	6	1.579654E-04	2.61	9.3	54.2	Yes	1.86	5.78	352.1	0.36	80.9	9.83	338.7
806	O0112_NE	5	1.316378E-04	1.95	9.54	54.4	Yes	0.92	4.54	171.1	0.54	299.9	6.93	168.3
37	O0113_NE	117	3.080325E-03	2.52	8.61	54.5	Yes	1.17	6.56	359.1	0.37	169.6	9.02	10.5
392	O0114_NE	25	6.581892E-04	1.62	7.46	55	Yes	0.8	4.77	316.4	0.28	107.4	6.69	308.9
822	O0115_NE	1	2.632757E-05	1.46	8.8	55	No	NaN	NaN	NaN	0.26	108.6	1.7	23.2
1145	O0116_NE	1	2.632757E-05	1.71	9.4	55.1	No	NaN	NaN	NaN	0.1	27.4	4.96	17.8
751	O0117_NE	1	2.632757E-05	1.66	7.5	56.1	No	NaN	NaN	NaN	0.12	88.6	4.77	100.7
271	O0118_ENE	9	2.369481E-04	1.55	6.77	57.2	Yes	0.76	4.4	263.7	0.21	164.5	6.69	241.3
474	O0119_ENE	9	2.369481E-04	1.29	5.73	57.3	Yes	0.76	9.1	146.9	0.24	356.1	7.61	50.9
1130	O0120_ENE	1	2.632757E-05	2.85	6.8	57.3	No	NaN	NaN	NaN	1.12	229.8	9.16	55.1
598	O0121_ENE	3	7.898270E-05	2.07	7.87	57.4	Yes	1.17	7.67	275.7	0.11	227.9	10.72	251.1
132	O0122_ENE	102	2.685412E-03	2.18	6.42	57.5	Yes	1.65	11.15	160.5	0.37	230.5	10.77	48.4
257	O0123_ENE	51	1.342706E-03	1.52	7.79	57.5	Yes	0.55	4.56	0.1	0.29	1.7	4.94	33.1
3	O0124_ENE	91	2.395809E-03	1.75	8.86	57.6	Yes	0.61	3.72	307.6	0.37	205.2	5.7	315.9
353	O0125_ENE	8	2.106205E-04	2.63	8.89	58	Yes	1.55	6.24	245.5	0.47	358.1	9.87	223.8
85	O0126_ENE	221	5.818392E-03	1.68	5.84	58.4	Yes	1.1	10.09	155.2	0.33	269.7	9.31	49.2
378	O0127_ENE	33	8.688097E-04	2.6	6.74	58.5	Yes	2.17	12.48	162	0.38	208.9	11.43	49
448	O0128_ENE	6	1.579654E-04	1.22	6.55	58.5	Yes	0.75	7.95	145	0.2	144.2	5.56	65.1
430	O0129_ENE	7	1.842930E-04	1.7	7.43	58.6	Yes	0.85	4.34	289.3	0.32	263.4	7.71	255.3
657	O0130_ENE	4	1.053103E-04	1.52	5.2	58.6	Yes	1.31	9.85	163.4	0.13	98.8	9.12	51.9
256	O0131_ENE	19	5.002238E-04	1.33	7.57	59.2	Yes	0.38	3.78	277.4	0.28	251	5.13	258.9
1021	O0132_ENE	1	2.632757E-05	2.38	13.1	59.5	Yes	1.76	10.4	241.5	0.65	234.2	11.8	246
145	O0133_ENE	252	6.634547E-03	1.34	5.26	59.7	Yes	0.99	8.99	141.6	0.34	193.9	7.99	53
1058	O0134_ENE	1	2.632757E-05	1.93	8.5	59.7	Yes	1.05	5	246.9	0.15	18.4	6.98	225.5
73	O0135_ENE	181	4.765290E-03	1.49	7.28	59.8	Yes	0.72	5.94	2.1	0.27	346.8	6.24	16.3
1163	O0136_ENE	1	2.632757E-05	3	8.3	60.2	Yes	0.34	8.2	133.6	1.16	205.3	12.32	54.2
699	O0137_ENE	4	1.053103E-04	2.74	8.72	60.8	Yes	1.9	5.67	341.1	0.39	49.4	10.19	315.4
223	O0138_ENE	26	6.845168E-04	2.21	9.12	61	Yes	1.06	5.13	316.9	0.46	248.5	7.8	312.1
813	O0139_ENE	2	5.265514E-05	2.29	9.75	61	Yes	1.16	4.5	2	0.34	308.8	8.55	3.7
858	O0140_ENE	2	5.265514E-05	2.83	12.5	61.2	Yes	1.42	6.95	290.3	0.39	311.1	10	267
920	O0141_ENE	1	2.632757E-05	0.97	6.6	61.2	No	0	1.4	232.2	0.48	35.4	3.61	201.6
242	O0142_ENE	32	8.424822E-04	2.56	7.22	62.2	Yes	1.34	11.47	154	0.23	12	11.56	55.2
235	O0143_ENE	90	2.369481E-03	1.9	7.92	62.3	Yes	0.95	6.13	10	0.31	342.8	7.07	19.9
1106	O0144_ENE	1	2.632757E-05	3.01	7.4	62.3	Yes	1.77	12.1	190.4	0.11	254.3	13.33	44.5
284	O0145_ENE	19	5.002238E-04	1.3	6.92	62.5	Yes	0.48	3.86	227.9	0.27	310	5.72	210.9
515	O0146_ENE	3	7.898270E-05	1.21	4.6	62.7	Yes	1.17	8.7	145.7	0.82	193	8.07	49.6
1073	O0147_ENE	1	2.632757E-05	1.88	5.3	63	Yes	1.33	4.5	333.3	0.1	139.2	8.77	301.3



TECHNICAL REPORT

No.: **I-RL-3A00.00-1000-941-PPC-001 rev.A**

Project: **SANTOS BASIN NORTHERN PRE-SALT FIELDS**

Sheet: **68 of 89**

Title: **DURATION OF EXTREME CURRENT PROFILES AND CLUSTERS OF SIMULTANEOUS METEOCEAN CONDITIONS**

Cluster	Name	Occurrence		Wave (Peak 1)			Wave (Peak 2)			Current		Wind		
		N	%	Hs	Tp	Dir	Is there?	Hs	Tp	Dir	Speed	Dir	Speed	Dir
595	O0148_ENE	9	2.369481E-04	2.44	8.88	63.5	Yes	1.43	7.45	43.8	0.29	84.2	8.75	37.1
646	O0149_ENE	7	1.842930E-04	3.76	8.63	63.5	Yes	0.99	9.23	132.3	0.51	218.8	14.5	55.4
326	O0150_ENE	76	2.000895E-03	1.31	5.21	63.7	Yes	0.89	9.14	148.3	0.27	297.1	7.8	57
938	O0151_ENE	2	5.265514E-05	1.03	6.7	63.8	No	NaN	NaN	NaN	0.15	229.2	4.33	83.4
108	O0152_ENE	125	3.290946E-03	2.59	7.51	64.9	Yes	0.91	10.41	153.7	0.39	159.4	11.28	54.8
1036	O0153_ENE	1	2.632757E-05	1.61	4.6	65.1	Yes	1.52	9.8	179.5	0.56	229.4	9.28	59.3
1038	O0154_ENE	1	2.632757E-05	2.04	7.2	65.2	Yes	1.65	5.5	336.6	0.38	108.6	12.31	302.1
8	O0155_ENE	283	7.450702E-03	1.38	7.62	66.2	Yes	0.56	4.17	204	0.34	252.9	5.59	170.1
19	O0156_ENE	361	9.504252E-03	1.73	8.54	66.3	Yes	0.7	4.24	225.9	0.38	297.3	6.29	215.7
978	O0157_ENE	2	5.265514E-05	1.13	4.1	66.9	Yes	0.93	8.4	144.9	0.42	282.1	7.12	64.5
272	O0158_ENE	24	6.318616E-04	3.38	8.19	67.4	Yes	1.33	10.1	133.6	0.38	221.7	13.37	57.9
81	O0159_ENE	280	7.371719E-03	1.41	6.79	67.6	Yes	0.68	7.34	122.4	0.35	243.9	6.82	44.9
301	O0160_ENE	12	3.159308E-04	1.13	7.16	67.7	Yes	0.27	4.33	189	0.42	333.4	5.02	170
703	O0161_ENE	3	7.898270E-05	1.99	7.53	67.9	Yes	1.05	8.85	148.1	0.32	237.4	10.21	59.2
24	O0162_ENE	442	1.163678E-02	1.58	7	68	Yes	0.79	7.27	97.5	0.29	141.9	7.23	41.8
213	O0163_ENE	17	4.475686E-04	2.73	7.18	68.3	Yes	1.81	12.21	158.7	0.26	106.6	11.89	61.3
525	O0164_ENE	4	1.053103E-04	2.7	7.45	68.7	Yes	0.46	11.85	170.2	0.36	253.3	12.38	61.7
125	O0165_ENE	107	2.817050E-03	1.43	7.34	68.8	Yes	0.73	5.62	12	0.37	238.1	5.77	31.6
40	O0166_ENE	779	2.050918E-02	1.57	7.87	69	Yes	0.7	4.37	1.1	0.34	219	5.84	19.3
773	O0167_ENE	1	2.632757E-05	2.7	7.7	69.1	Yes	1.54	11.4	167.3	0.04	2.7	11.66	58.8
102	O0168_ENE	34	8.951373E-04	1.26	6.43	69.3	Yes	0.67	6.5	93.8	0.23	327.9	6.72	48.7
539	O0169_ENE	11	2.896032E-04	1.7	9.66	70.1	Yes	0.72	4.15	202.3	0.38	19.4	6.89	208.2
628	O0170_ENE	10	2.632757E-04	1.24	4.9	70.4	Yes	1.04	10.3	162.2	0.18	101.1	7.65	62.3
405	O0171_ENE	14	3.685859E-04	2.36	6.88	70.5	Yes	1.56	10.82	155.8	0.35	159.1	10.73	61.1
690	O0172_ENE	1	2.632757E-05	1.63	11.5	70.5	No	NaN	NaN	NaN	0.12	143	3.64	43
1166	O0173_ENE	1	2.632757E-05	1.43	19	70.8	Yes	0.13	2.1	181.3	0.32	343.2	3.8	174.2
435	O0174_ENE	6	1.579654E-04	1.08	4.32	71	Yes	0.98	8.87	151.1	0.22	55.7	7.79	57.3
239	O0175_ENE	64	1.684964E-03	1.46	8.38	71.6	Yes	0.63	4.67	173.2	0.4	252.8	5.49	127.1
159	O0176_ENE	66	1.737619E-03	1.8	8.52	71.9	Yes	0.87	4.42	350.9	0.29	93.5	6.3	355.4
664	O0177_ENE	10	2.632757E-04	2.55	9.18	72.8	Yes	1.68	6.97	11.9	0.31	310.6	8.92	18.4
237	O0178_ENE	25	6.581892E-04	2.68	8.38	72.9	Yes	1.16	7.71	72.5	0.35	226.9	10.09	47.9
127	O0179_ENE	30	7.898270E-04	1.9	5.8	73.2	Yes	1.65	11.2	171.6	0.37	245.6	10.47	63.8
273	O0180_ENE	9	2.369481E-04	1.36	5.99	73.3	Yes	0.85	8.26	129.3	0.31	214.2	7.61	62.5
423	O0181_ENE	7	1.842930E-04	1.9	6.53	73.5	Yes	0.81	8.74	151.8	0.43	254.2	9.06	53.5
1034	O0182_ENE	2	5.265514E-05	1.86	10.1	73.6	Yes	0.73	4.05	193.3	0.17	2.5	6.75	174.5
45	O0183_ENE	97	2.553774E-03	1.78	6.39	73.7	Yes	0.91	9.55	163.3	0.18	78.8	9	66.4
772	O0184_ENE	1	2.632757E-05	1.36	7.6	74.9	Yes	1.05	6.1	200.8	0.27	75.1	7.24	196.9
36	O0185_ENE	236	6.213306E-03	1.78	8.85	75.7	Yes	0.89	5.15	80.9	0.41	233.5	5.85	65
402	O0186_ENE	9	2.369481E-04	1.04	6.47	75.8	Yes	0.44	3.14	359.2	0.31	49.2	4.62	348.3
833	O0187_ENE	2	5.265514E-05	1.81	9.8	75.8	Yes	0.87	4.1	307.1	0.26	228.1	7.6	290.5
1134	O0188_ENE	1	2.632757E-05	1.7	6.8	75.8	Yes	0.59	3.3	296.1	0.26	197.5	6.26	267.1
762	O0189_ENE	3	7.898270E-05	1.1	4.6	76.1	Yes	0.99	9.67	159.6	0.24	239.3	7.49	72.4
837	O0190_ENE	2	5.265514E-05	1.96	14.1	76.2	Yes	0.74	3.7	14.7	0.46	162.1	4.87	36.3
266	O0191_ENE	36	9.477924E-04	1.47	8.73	76.7	Yes	0.52	3.96	199.3	0.28	88.8	4.88	172
177	O0192_ENE	36	9.477924E-04	1.96	6.09	76.8	Yes	1.71	10.92	172.2	0.22	69.5	10.22	64.8
438	O0193_ENE	9	2.369481E-04	2.86	9.54	76.8	Yes	1.13	9.97	137.7	0.36	226.3	9.79	45.6
198	O0194_ENE	47	1.237396E-03	1.28	8.01	77	Yes	0.36	3.13	210.3	0.34	4.5	4.62	204.9
217	O0195_ENE	16	4.212411E-04	1.91	10.53	77.2	Yes	0.64	3.89	250.8	0.36	17	6.39	221.4
214	O0196_ENE	56	1.474344E-03	1.54	5.25	77.3	Yes	1.29	9.85	168.9	0.34	283.6	9.03	67.7
279	O0197_ENE	41	1.079430E-03	1.55	9.15	77.3	Yes	0.49	3.85	226.3	0.38	311.1	5.11	215.3



TECHNICAL REPORT

No.: **I-RL-3A00.00-1000-941-PPC-001 rev.A**

Project: **SANTOS BASIN NORTHERN PRE-SALT FIELDS**

Sheet: **69 of 89**

Title: **DURATION OF EXTREME CURRENT PROFILES AND CLUSTERS OF SIMULTANEOUS METEOCEAN CONDITIONS**

Cluster	Name	Occurrence		Wave (Peak 1)			Wave (Peak 2)			Current		Wind		
		N	%	Hs	Tp	Dir	Is there?	Hs	Tp	Dir	Speed	Dir	Speed	Dir
579	O0198_ENE	6	1.579654E-04	1.91	10.83	77.3	Yes	1.13	5.53	240.1	0.32	198.7	8.46	225.9
1170	O0199_ENE	1	2.632757E-05	1.86	11.6	77.3	Yes	0.4	3.3	270.4	0.28	90	4.63	246.6
568	O0200_ENE	4	1.053103E-04	2.86	8.35	77.4	Yes	1.5	10.75	140.8	0.22	169.3	11.84	50.7
707	O0201_ENE	2	5.265514E-05	3.16	8.8	77.4	Yes	1.23	13.6	151.9	0.24	176.8	11.63	67.4
783	O0202_ENE	2	5.265514E-05	2.48	8.6	78	Yes	1.27	9.95	87.3	0.25	154.3	9.16	45.2
259	O0203_ENE	46	1.211068E-03	1.54	5.39	78.1	Yes	1.26	10.19	164.3	0.36	204.9	8.88	68.7
512	O0204_ENE	6	1.579654E-04	1.18	6.78	78.1	Yes	0.49	3.37	215.4	0.17	109.2	5.65	216.6
894	O0205_ENE	1	2.632757E-05	3.17	8	78.1	Yes	1.61	9.7	131.9	0.52	267.8	12.88	66.4
630	O0206_ENE	1	2.632757E-05	1.68	12.2	78.2	Yes	1.66	5.8	210.5	0.24	1	10.35	196.7
631	O0207_ENE	4	1.053103E-04	2.54	8.03	78.2	Yes	1.06	5.2	309.7	0.33	23.8	8.77	256.3
679	O0208_ENE	2	5.265514E-05	1.16	8.3	78.2	Yes	0.42	3.55	26	0.17	74	4.22	32
218	O0209_ENE	29	7.634995E-04	2.86	7.28	78.3	Yes	2.02	12.98	165.1	0.38	245.5	11.87	72.5
880	O0210_ENE	5	1.316378E-04	1.73	10.06	78.5	Yes	0.76	3.84	238.6	0.39	296.4	6.48	221.9
390	O0211_E	15	3.949135E-04	2.13	8.39	78.9	Yes	1.18	4.87	3.8	0.49	230.1	7.05	34.3
726	O0212_E	5	1.316378E-04	1.41	9.48	79.2	Yes	0.43	2.96	282.9	0.27	66.3	4.82	262.7
838	O0213_E	1	2.632757E-05	1.55	15.4	79.4	Yes	0.66	3.7	283.6	0.33	64.7	5.41	262.5
91	O0214_E	128	3.369929E-03	1.49	7.86	79.5	Yes	0.64	4.57	183.5	0.38	318.7	5.67	147.9
906	O0215_E	1	2.632757E-05	2.19	14.7	79.5	Yes	1.84	5.6	283	0.46	117.8	10.85	265.9
779	O0216_E	9	2.369481E-04	1.58	5.54	79.7	Yes	1.12	12.3	168.3	0.16	66	8.02	73.6
42	O0217_E	287	7.556012E-03	1.5	7.81	79.9	Yes	0.74	4.37	24.5	0.26	59.1	5.55	38.6
227	O0218_E	48	1.263723E-03	2.15	8.02	79.9	Yes	1.31	6.55	25.2	0.31	125	8.13	22.3
696	O0219_E	3	7.898270E-05	1.63	14.97	79.9	Yes	0.94	4.5	218.2	0.53	12.5	7.02	201.1
1112	O0220_E	1	2.632757E-05	1.39	12.5	80	Yes	0.28	3.3	305.7	0.18	6.5	4.21	272.5
1123	O0221_E	1	2.632757E-05	1.11	9.7	80	Yes	0.52	3.4	16.2	0.5	348.1	4.7	10.4
314	O0222_E	16	4.212411E-04	2.08	6.81	80.1	Yes	1.35	10.62	161.5	0.2	15.8	9.83	75.1
624	O0223_E	2	5.265514E-05	1.48	6.2	80.8	Yes	1.01	4.4	329	0.16	114.4	6.6	318.3
1023	O0224_E	2	5.265514E-05	2.98	11.95	81.2	No	NaN	NaN	NaN	0.18	201.6	7.47	75.3
1018	O0225_E	2	5.265514E-05	2.52	8.7	81.5	Yes	1.29	7.05	206	0.46	252.7	10.01	241.2
1093	O0226_E	2	5.265514E-05	1.15	6.05	81.8	Yes	0.66	3.8	23.6	0.35	70.2	6.16	47.8
115	O0227_E	34	8.951373E-04	2.15	9	81.9	Yes	1.02	5.23	215.9	0.39	320.5	7.41	210.2
912	O0228_E	4	1.053103E-04	2.66	6.88	82.3	Yes	2.54	14.28	167	0.37	287.8	11.37	79.5
1147	O0229_E	1	2.632757E-05	1.42	15.8	82.5	Yes	0.62	5	231.3	0.19	176.1	5.93	195.6
43	O0230_E	700	1.842930E-02	1.73	6.02	82.7	Yes	1.11	9.75	162.1	0.39	239	9.06	74.6
905	O0231_E	1	2.632757E-05	2.96	11.3	82.9	Yes	0.47	6.8	155.8	0.14	2.9	7.2	199.2
777	O0232_E	4	1.053103E-04	1.75	13.32	83.2	Yes	1.14	4.5	15.1	0.31	155.6	6.7	8.6
827	O0233_E	3	7.898270E-05	2.06	10.87	83.3	Yes	0.78	3.87	356.6	0.16	73.3	5.5	343.8
955	O0234_E	3	7.898270E-05	1.77	9.5	83.4	Yes	0.4	3.5	12.7	0.36	266.9	4.53	36.8
446	O0235_E	4	1.053103E-04	1.56	12.27	83.9	Yes	0.84	4.5	19.4	0.36	205.6	5.45	54
879	O0236_E	6	1.579654E-04	1.63	8.1	84.2	Yes	0.54	4.5	236.9	0.15	125.9	5.74	229.4
440	O0237_E	19	5.002238E-04	1.18	7.2	84.5	Yes	0.3	4.43	90.4	0.24	67.4	4.42	80.8
682	O0238_E	1	2.632757E-05	1.4	12.5	84.5	Yes	0.77	4.1	306.8	0.09	98.6	5.55	289.2
1138	O0239_E	2	5.265514E-05	2.31	6.7	84.6	Yes	1.88	12.35	173	0.47	352.8	10.02	79.4
76	O0240_E	116	3.053998E-03	2.19	6.43	85	Yes	1.66	11.32	170.9	0.44	243.8	10.56	74.7
734	O0241_E	3	7.898270E-05	1.68	9.3	86.2	Yes	0.35	3.3	284.6	0.24	227.7	4.37	256.3
757	O0242_E	7	1.842930E-04	1.18	8.7	86.6	Yes	0.31	3	17.8	0.41	220.9	4.28	68.4
1037	O0243_E	1	2.632757E-05	2.4	12.8	86.7	Yes	0.78	5.9	250.1	0.36	343.5	7.12	206
971	O0244_E	4	1.053103E-04	1.96	10.98	86.9	Yes	0.41	2.2	97.1	0.41	333.4	4.54	95.7
705	O0245_E	8	2.106205E-04	2.04	8.86	87	Yes	0.91	4.33	6.6	0.32	297.1	6.24	354.8
322	O0246_E	16	4.212411E-04	1.3	7.93	87.3	Yes	0.56	3.6	8.7	0.26	304.9	5.13	40.9
634	O0247_E	12	3.159308E-04	1.51	5.57	87.4	Yes	0.69	9.63	177	0.26	181.1	7.96	77.7



TECHNICAL REPORT

No.: **I-RL-3A00.00-1000-941-PPC-001 rev.A**

Project: **SANTOS BASIN NORTHERN PRE-SALT FIELDS**

Sheet: **70 of 89**

Title: **DURATION OF EXTREME CURRENT PROFILES AND CLUSTERS OF SIMULTANEOUS METEOCEAN CONDITIONS**

Cluster	Name	Occurrence		Wave (Peak 1)			Wave (Peak 2)			Current		Wind		
		N	%	Hs	Tp	Dir	Is there?	Hs	Tp	Dir	Speed	Dir	Speed	Dir
429	O0248_E	3	7.898270E-05	2.09	12.67	87.6	Yes	1.23	5.7	230.7	0.23	118.1	8.8	216.3
375	O0249_E	37	9.741200E-04	1.5	9.17	88.7	Yes	0.53	3.79	170.6	0.32	273.8	4.94	134.9
1013	O0250_E	1	2.632757E-05	3.12	14.3	88.7	Yes	1.4	5	309.1	0.47	47.8	10.48	280.4
732	O0251_E	2	5.265514E-05	1.77	12.9	89	Yes	0.55	3.6	209.7	0.18	142.3	6.41	188.3
823	O0252_E	4	1.053103E-04	2.15	10.25	89.3	Yes	0.85	4.17	23.1	0.11	95.2	6.55	17.4
907	O0253_E	2	5.265514E-05	1.42	16.15	89.4	Yes	0.77	3.8	4	0.12	73.2	6.26	350.5
916	O0254_E	3	7.898270E-05	1.86	14.37	89.4	Yes	0.78	4	98.2	0.59	233.6	6.04	81.5
403	O0255_E	16	4.212411E-04	2.02	7.04	89.5	Yes	1.28	9.77	163.9	0.43	222.6	9.25	70.9
629	O0256_E	8	2.106205E-04	2.21	13.16	89.7	Yes	1.28	6.81	190.2	0.42	352	8.69	198.7
55	O0257_E	341	8.977701E-03	1.53	8.53	90	Yes	0.64	3.82	10.4	0.3	312.6	5.48	23.9
467	O0258_E	8	2.106205E-04	1.84	8.19	90	Yes	0.93	4.41	278.8	0.39	7.5	6.98	261.7
169	O0259_E	6	1.579654E-04	1.63	13.28	90.3	Yes	0.77	3.95	30.3	0.47	244.4	5.02	55.9
244	O0260_E	28	7.371719E-04	1.37	8.76	90.3	Yes	0.51	3.36	331.3	0.36	146.3	4.93	327
507	O0261_E	4	1.053103E-04	1.77	11.2	90.3	Yes	0.44	2.7	247.7	0.25	315.1	4.71	236.4
294	O0262_E	25	6.581892E-04	1.69	7.33	90.9	Yes	1.05	5.72	31.7	0.25	26.5	7.22	37.6
469	O0263_E	8	2.106205E-04	2.12	8.07	91.2	Yes	1.18	4.92	3.4	0.26	8.4	7.03	7.8
855	O0264_E	1	2.632757E-05	1.52	21.2	91.7	Yes	1.15	4.5	45.2	0.17	209.3	6.5	44
1047	O0265_E	1	2.632757E-05	2.5	12.7	91.7	Yes	0.8	3.8	7.3	0.08	94.8	5.6	4
542	O0266_E	6	1.579654E-04	1.99	7.1	91.9	Yes	1.43	6.77	357.8	0.38	121.2	9.87	3.7
795	O0267_E	1	2.632757E-05	1.38	14.6	91.9	Yes	0.44	3.6	299.1	0.29	323.9	4.54	286.9
111	O0268_E	90	2.369481E-03	1.74	9.3	92.1	Yes	0.75	4.03	17.3	0.24	42.6	5.73	34.3
432	O0269_E	12	3.159308E-04	1.68	11.53	92.1	Yes	0.65	3.98	289.6	0.22	240.8	6.01	267.8
69	O0270_E	286	7.529684E-03	2.27	7.77	92.3	Yes	1.04	8.51	130.9	0.43	240.2	9.59	69.1
71	O0271_E	137	3.606877E-03	1.21	7.32	92.6	Yes	0.46	3.27	17.4	0.29	310	4.74	17
932	O0272_E	4	1.053103E-04	1.98	12.05	92.7	Yes	1.16	4.65	19.2	0.41	211.9	6.72	8.9
268	O0273_E	19	5.002238E-04	1.32	6.03	92.8	Yes	0.85	8.94	154	0.27	247.4	7.05	81.1
1122	O0274_E	1	2.632757E-05	2.97	9.1	92.9	Yes	1.54	5.4	2.9	0.1	295.5	8.96	329.7
836	O0275_E	4	1.053103E-04	2.06	14.95	93	Yes	1.3	4.78	340.4	0.43	122.4	8.07	327.5
275	O0276_E	18	4.738962E-04	1.77	12.93	93.1	Yes	0.75	4.11	359.9	0.24	15.8	5.47	354.3
245	O0277_E	16	4.212411E-04	1.22	6.59	93.3	Yes	0.66	3.87	0	0.32	215.4	5.79	357.4
334	O0278_E	24	6.318616E-04	1.12	7.2	93.3	Yes	0.38	3.21	204.8	0.34	300.4	4.66	182.9
641	O0279_E	2	5.265514E-05	2.59	14.2	93.3	Yes	1.19	4.75	32.9	0.12	249.4	6.69	27.5
84	O0280_E	8	2.106205E-04	1.48	10.59	93.4	Yes	0.29	2.66	294.8	0.27	202.7	4.05	266.1
224	O0281_E	37	9.741200E-04	1.71	9.61	93.9	Yes	0.8	4.02	16.8	0.4	174.9	5.57	38.5
264	O0282_E	32	8.424822E-04	1.57	8.07	94.1	Yes	0.49	3.32	238.8	0.38	246	4.87	229.7
935	O0283_E	3	7.898270E-05	1.5	5.37	94.1	Yes	0.52	8.5	179.4	0.24	278.1	7.94	90.1
17	O0284_E	96	2.527446E-03	1.37	7.41	94.2	Yes	0.55	3.85	227.6	0.35	327.7	5.35	212.6
1193	O0285_E	1	2.632757E-05	1.86	11.9	94.2	Yes	0.36	3.3	29.6	0.06	64.3	3.62	29.5
357	O0286_E	14	3.685859E-04	1.22	7.88	94.6	Yes	0.47	3.87	201	0.48	250.9	4.86	179.6
475	O0287_E	2	5.265514E-05	1.58	11.55	94.6	No	NaN	NaN	NaN	0.08	165.8	4.09	138.5
808	O0288_E	4	1.053103E-04	1.77	7.88	94.7	Yes	0.83	4.4	10.3	0.2	264.5	6.54	348.2
60	O0289_E	319	8.398494E-03	2.45	7.18	94.8	Yes	1.37	10.62	167.5	0.45	259	10.61	85.3
231	O0290_E	20	5.265514E-04	3.49	8.91	94.9	Yes	0.97	9.33	149.7	0.25	263.8	12.82	81
756	O0291_E	1	2.632757E-05	1.17	7.4	94.9	No	NaN	NaN	NaN	0.27	312.3	4.03	70.8
417	O0292_E	17	4.475686E-04	2.08	9.58	95.2	Yes	0.61	3.84	230	0.3	265.7	6.13	223.9
761	O0293_E	6	1.579654E-04	1.45	7.2	95.6	Yes	0.81	4.18	2.2	0.2	196.9	6.56	340.4
236	O0294_E	47	1.237396E-03	1.47	5.12	95.7	Yes	1.11	9.44	174.4	0.45	227.2	8.6	88.9
863	O0295_E	3	7.898270E-05	2.08	15.47	95.7	Yes	0.73	3.85	33.4	0.22	182.8	5.18	47.3
1118	O0296_E	1	2.632757E-05	2.04	8.1	96.4	Yes	1.72	5.6	340	0.18	248.8	9.62	323.1
865	O0297_E	4	1.053103E-04	4.45	8.95	96.6	Yes	0.96	10.7	170.6	0.45	231.1	15.02	91.5



TECHNICAL REPORT

No.: **I-RL-3A00.00-1000-941-PPC-001 rev.A**

Project: **SANTOS BASIN NORTHERN PRE-SALT FIELDS**

Sheet: **71 of 89**

Title: **DURATION OF EXTREME CURRENT PROFILES AND CLUSTERS OF SIMULTANEOUS METEOCEAN CONDITIONS**

Cluster	Name	Occurrence		Wave (Peak 1)			Wave (Peak 2)			Current		Wind		
		N	%	Hs	Tp	Dir	Is there?	Hs	Tp	Dir	Speed	Dir	Speed	Dir
949	O0298_E	2	5.265514E-05	1.42	7.45	96.6	Yes	0.07	1.55	255.1	0.38	13.3	3.19	272.3
420	O0299_E	16	4.212411E-04	1.38	6.84	96.8	Yes	0.64	3.92	302	0.27	5.6	5.38	270.3
1173	O0300_E	1	2.632757E-05	2.28	13.8	97	Yes	1.56	5.5	33.5	0.22	202	7.75	26.3
164	O0301_E	109	2.869705E-03	1.48	7.14	97.2	Yes	0.92	5.26	48.8	0.36	260.1	6.53	57.1
911	O0302_E	2	5.265514E-05	1.18	6.45	97.4	Yes	0.85	4.2	34.9	0.32	112	6.82	56
558	O0303_E	11	2.896032E-04	1.35	8.66	97.6	Yes	0.46	3.26	102	0.72	238.6	4.45	96.2
536	O0304_E	3	7.898270E-05	2.65	9.33	97.9	Yes	1.39	6.13	216	0.25	331.4	8.15	202.1
148	O0305_E	95	2.501119E-03	1.96	6.61	98	Yes	1.35	10.41	176.4	0.41	261.2	9.55	87.8
139	O0306_E	61	1.605982E-03	2.89	8.76	98.1	Yes	0.98	9.34	136.7	0.38	244.3	10.67	80
746	O0307_E	2	5.265514E-05	1.59	6.5	98.1	Yes	1.19	4.75	355.1	0.64	168.4	7.28	340.6
184	O0308_E	46	1.211068E-03	1.31	6.69	98.2	Yes	0.79	6.32	126.7	0.38	253.9	5.97	82.1
468	O0309_E	4	1.053103E-04	1.83	15.03	98.2	Yes	0.95	4.05	320.1	0.32	358.7	6.61	311
583	O0310_E	15	3.949135E-04	1.28	4.57	98.4	Yes	0.98	9.19	168.2	0.37	273	7.42	94.7
957	O0311_E	1	2.632757E-05	1.93	7.6	98.9	No	NaN	NaN	NaN	0.09	180	3.87	86.8
934	O0312_E	2	5.265514E-05	1.86	13.85	99.1	Yes	0.61	3.8	34.5	0.28	6.3	5.25	23.2
473	O0313_E	2	5.265514E-05	2.69	8.8	99.4	Yes	2.15	6.35	26.2	0.14	45.5	9.94	9
1158	O0314_E	1	2.632757E-05	3	7.4	99.5	No	NaN	NaN	NaN	0.26	165.3	9.5	100.2
82	O0315_E	145	3.817497E-03	1.71	8.23	99.6	Yes	0.81	4.54	162	0.32	321.2	5.94	131
173	O0316_E	5	1.316378E-04	2.57	15	99.8	Yes	1.28	5.06	36.9	0.22	276.1	7.33	26.7
398	O0317_E	27	7.108443E-04	1.77	10.77	100.2	Yes	0.64	3.67	19.6	0.28	165.5	4.93	33.7
982	O0318_E	3	7.898270E-05	2.33	11.73	100.2	Yes	1.33	5	51.2	0.24	197	7.03	50.9
1184	O0319_E	1	2.632757E-05	2.12	14.8	100.3	Yes	0.4	3.5	324.5	0.3	187.1	4.27	308.7
801	O0320_E	2	5.265514E-05	2.25	13.5	100.6	Yes	0.9	5.25	154.8	0.36	256.2	6.59	165.1
352	O0321_E	12	3.159308E-04	1.57	12.72	100.8	Yes	0.76	3.87	337.7	0.31	203.2	5.84	329.5
721	O0322_E	9	2.369481E-04	2.5	13.18	101	Yes	1.58	5.7	8.3	0.37	189.1	8.35	0.6
38	O0323_ESE	120	3.159308E-03	1.69	8.93	101.5	Yes	0.72	4.21	229.7	0.34	355	6.01	223.2
46	O0324_ESE	57	1.500671E-03	3.15	8.11	101.9	Yes	1.2	10.67	166.3	0.42	239.5	11.89	96.2
812	O0325_ESE	4	1.053103E-04	3.59	10.03	101.9	No	NaN	NaN	NaN	0.3	228.4	8.31	88.1
152	O0326_ESE	72	1.895585E-03	1.54	9.58	102.4	Yes	0.68	4.1	51.4	0.27	275.8	5.42	63.2
414	O0327_ESE	18	4.738962E-04	2.1	11.87	102.8	Yes	0.9	4.24	2.7	0.28	19.1	5.93	1
348	O0328_ESE	7	1.842930E-04	1.99	13.93	102.9	Yes	1.16	4.78	39.6	0.23	18.5	6.67	42.8
715	O0329_ESE	10	2.632757E-04	1.35	7.22	103.3	Yes	0.62	4.76	86.6	0.23	130.7	4.95	86.8
451	O0330_ESE	22	5.792065E-04	1.36	8.85	103.6	Yes	0.54	3.81	215.4	0.29	306.9	4.99	198.6
627	O0331_ESE	6	1.579654E-04	2.23	11.35	104.2	Yes	1.08	4.66	182.1	0.45	310.8	7.13	167.7
22	O0332_ESE	619	1.629676E-02	1.54	8.31	104.4	Yes	0.82	4.32	31.7	0.33	181.8	5.98	38.7
828	O0333_ESE	6	1.579654E-04	2.62	10.43	104.4	No	NaN	NaN	NaN	0.24	274.6	7.66	105.8
49	O0334_ESE	173	4.554669E-03	1.51	8.03	104.6	Yes	0.61	4.17	173.9	0.32	191.8	5.22	138
551	O0335_ESE	11	2.896032E-04	3.06	9.8	104.6	Yes	0.95	7.05	70.3	0.34	246.5	9.03	75.8
397	O0336_ESE	19	5.002238E-04	2.16	8.44	104.9	Yes	1.47	6.52	35.9	0.36	283.3	8.66	46.5
293	O0337_ESE	15	3.949135E-04	1.64	9.75	105.1	Yes	0.57	3.64	284.4	0.22	26.4	5.28	275.8
1057	O0338_ESE	2	5.265514E-05	1.42	9.75	105.1	Yes	0.31	2.4	232.5	0.21	89.6	4.63	222.2
160	O0339_ESE	45	1.184741E-03	1.82	8.91	105.3	Yes	0.64	4.07	237.4	0.35	199.3	5.84	236.6
150	O0340_ESE	11	2.896032E-04	2.47	10.13	105.4	Yes	1.38	5.45	320.6	0.3	27.9	8.5	300
422	O0341_ESE	15	3.949135E-04	1.49	8.78	105.4	Yes	0.55	4.3	204.8	0.48	216.5	5.75	198.4
936	O0342_ESE	2	5.265514E-05	2.68	8.95	105.6	No	NaN	NaN	NaN	0.47	325.8	7.53	121.7
1135	O0343_ESE	1	2.632757E-05	2.5	10.5	105.6	Yes	1.1	5	53.6	0.46	187.9	7.02	28.8
1156	O0344_ESE	1	2.632757E-05	1.88	11	105.7	Yes	1.75	6.1	36.3	0.18	171.1	8.49	23.1
834	O0345_ESE	2	5.265514E-05	2.12	10.25	105.8	Yes	0.4	4.5	252	0.14	272.1	7.13	246.6
1187	O0346_ESE	1	2.632757E-05	1.25	3.9	105.8	No	NaN	NaN	NaN	0.45	244.5	7.3	113
1136	O0347_ESE	1	2.632757E-05	2.34	11	106.1	Yes	1.53	4.7	298.1	0.11	307.2	13.97	281.9

Cluster	Name	Occurrence		Wave (Peak 1)			Wave (Peak 2)			Current		Wind	
		N	%	Hs	Tp	Dir	Is there?	Hs	Tp	Dir	Speed	Dir	Speed



TECHNICAL REPORT

No.: **I-RL-3A00.00-1000-941-PPC-001 rev.A**

Project: **SANTOS BASIN NORTHERN PRE-SALT FIELDS**

Sheet: **72 of 89**

Title: **DURATION OF EXTREME CURRENT PROFILES AND CLUSTERS OF SIMULTANEOUS METEOCEAN CONDITIONS**

129	O0348_ESE	53	1.395361E-03	2.03	9.89	106.2	Yes	0.84	4.64	204.6	0.25	54.3	6.35	188.6
725	O0349_ESE	4	1.053103E-04	2.43	6.58	106.9	Yes	2.31	13.58	176.5	0.6	237.1	11.19	96.3
632	O0350_ESE	11	2.896032E-04	2.05	8.97	107.2	Yes	1.08	5.05	264	0.25	295.4	7.23	272
258	O0351_ESE	24	6.318616E-04	1.79	10.62	107.3	Yes	0.8	4.46	230.2	0.28	16	6.68	226.1
68	O0352_ESE	6	1.579654E-04	2.65	13	107.4	Yes	1.37	4.92	12	0.19	55.4	7.61	0.7
697	O0353_ESE	7	1.842930E-04	1.82	11.07	107.7	Yes	0.96	4.54	37.4	0.13	2	6.06	48.2
1075	O0354_ESE	1	2.632757E-05	1.76	12.5	107.7	Yes	0.54	3.6	158.8	0.08	33.3	5.99	177.5
511	O0355_ESE	6	1.579654E-04	2.73	11.73	108	Yes	0.68	4.3	243	0.32	10.7	5.96	240.6
578	O0356_ESE	4	1.053103E-04	1.93	6.52	108.2	Yes	1.03	7.93	158.9	0.25	142.2	8.6	77.3
240	O0357_ESE	21	5.528789E-04	1.72	11.25	108.3	Yes	0.91	4.31	40.9	0.26	188.7	5.86	49.2
625	O0358_ESE	12	3.159308E-04	1.95	14.19	108.4	Yes	0.69	4.54	229.7	0.33	62.7	6.11	206.1
738	O0359_ESE	5	1.316378E-04	1.9	14.54	108.7	Yes	0.75	4	312.9	0.32	357.4	5.74	310.9
72	O0360_ESE	409	1.076798E-02	1.57	9.07	108.8	Yes	0.74	4.07	28.5	0.31	229.3	5.81	34.2
64	O0361_ESE	338	8.898718E-03	1.34	7.68	109.1	Yes	0.72	4.44	38.3	0.37	226.8	5.63	54.9
255	O0362_ESE	22	5.792065E-04	1.52	10.47	109.1	Yes	0.7	4.39	120.7	0.4	249.3	5.32	111
942	O0363_ESE	3	7.898270E-05	1.41	13.47	109.2	Yes	0.44	3.53	207.9	0.34	308.8	4.55	199.5
124	O0364_ESE	35	9.214649E-04	2.02	14.01	109.5	Yes	0.87	4.25	17.9	0.31	220.6	6	13.5
277	O0365_ESE	15	3.949135E-04	1.58	6.17	109.5	Yes	1	7.94	180.5	0.22	16.9	8.38	96.4
11	O0366_ESE	89	2.343154E-03	1.77	10.33	109.6	Yes	0.85	4.22	24.4	0.36	195.5	6.29	22.1
719	O0367_ESE	2	5.265514E-05	1.85	6.7	109.8	Yes	1.05	4.5	359	0.33	347.5	7.38	332.5
252	O0368_ESE	35	9.214649E-04	1.6	9.69	110.1	Yes	0.53	3.55	274.9	0.28	256.3	5.43	260.9
343	O0369_ESE	12	3.159308E-04	2.16	9.53	110.2	Yes	0.74	4.53	271.5	0.19	33.5	6.37	267.5
992	O0370_ESE	2	5.265514E-05	1.37	10	110.3	Yes	0.36	3.3	30.8	0.12	72.2	3.72	65.1
617	O0371_ESE	8	2.106205E-04	1.67	7.59	110.6	Yes	1.09	4.78	21.7	0.34	118	6.7	13.5
332	O0372_ESE	17	4.475686E-04	2.2	8.65	110.7	Yes	1.38	5.26	23.1	0.29	57	7.68	20.2
735	O0373_ESE	2	5.265514E-05	1.52	11.4	111	Yes	0.7	3.9	334	0.2	109.7	6.42	310.6
648	O0374_ESE	5	1.316378E-04	1.6	5.58	111.5	Yes	0.86	7.8	188.6	0.22	348.7	7.77	104.7
1096	O0375_ESE	3	7.898270E-05	2.02	6.07	111.8	Yes	1.79	11.5	192.5	0.29	5.1	9.31	101.7
445	O0376_ESE	5	1.316378E-04	2.37	10.56	112.1	Yes	1.96	6.66	264.5	0.31	47.1	10.19	270.4
1133	O0377_ESE	3	7.898270E-05	1.64	9.7	112.1	Yes	0.92	4.6	50.2	0.13	54.6	5.71	71.2
543	O0378_ESE	3	7.898270E-05	1.21	8.43	112.6	Yes	0.44	3.3	20.2	0.35	128.3	5.2	33.6
288	O0379_ESE	10	2.632757E-04	1.85	9.95	112.7	Yes	1.12	5.18	51.3	0.27	141.3	5.94	72.7
254	O0380_ESE	15	3.949135E-04	1.44	10.63	112.9	Yes	0.6	3.62	346.7	0.26	356.1	5.64	339.5
1016	O0381_ESE	2	5.265514E-05	1.19	8.65	112.9	No	NaN	NaN	NaN	0.39	245	4.59	102
501	O0382_ESE	18	4.738962E-04	2.12	11.56	113	Yes	0.92	4.2	354.3	0.37	174.4	6.56	339.3
1089	O0383_ESE	1	2.632757E-05	1.16	8.6	113	Yes	0.51	3.4	27.8	0.25	238	5.15	10.4
278	O0384_ESE	30	7.898270E-04	2	11.59	113.1	Yes	0.89	4.76	188.6	0.37	303.4	6.23	169.4
1161	O0385_ESE	1	2.632757E-05	1.5	5.5	113.1	No	NaN	NaN	NaN	0.35	207.9	7.36	98.9
187	O0386_ESE	34	8.951373E-04	2.04	10.64	113.2	Yes	0.93	4.28	16	0.27	351.4	6.5	24.5
549	O0387_ESE	9	2.369481E-04	1.9	13.37	113.2	Yes	0.27	2.64	302.9	0.21	272.9	4.17	291.7
562	O0388_ESE	7	1.842930E-04	1.9	12.73	113.5	Yes	0.73	4.03	56.5	0.31	187	5.22	55.6
342	O0389_ESE	22	5.792065E-04	1.48	9.54	113.7	Yes	0.82	4.22	28.8	0.34	161.1	5.61	35.5
1048	O0390_ESE	2	5.265514E-05	2.16	9	113.7	Yes	1.53	5.5	48.7	0.34	223.8	8.27	51.6
492	O0391_ESE	17	4.475686E-04	3.19	10.72	114	No	NaN	NaN	NaN	0.47	220.8	8.48	96.6
904	O0392_ESE	1	2.632757E-05	1.72	15	114	Yes	1.32	5.2	194.9	0.51	328.6	7.88	184.1
1190	O0393_ESE	1	2.632757E-05	2.18	7.5	114.1	Yes	0.38	8	178.2	0.34	12.8	10.82	106.2
116	O0394_ESE	128	3.369929E-03	1.62	8.97	114.2	Yes	0.71	4.02	41.2	0.21	55.8	5.42	60.1
645	O0395_ESE	7	1.842930E-04	2.3	9.06	114.2	Yes	1.34	5.11	36.7	0.22	12.1	7.39	29
1191	O0396_ESE	1	2.632757E-05	4.3	9.8	114.2	No	NaN	NaN	NaN	0.61	239.8	10.61	94
815	O0397_ESE	5	1.316378E-04	2.36	8.68	114.7	Yes	1.26	5.25	207.6	0.59	308.8	6.76	147



TECHNICAL REPORT

No.: **I-RL-3A00.00-1000-941-PPC-001 rev.A**

Project: **SANTOS BASIN NORTHERN PRE-SALT FIELDS**

Sheet: **73 of 89**

Title: **DURATION OF EXTREME CURRENT PROFILES AND CLUSTERS OF SIMULTANEOUS METEOCEAN CONDITIONS**

Cluster	Name	Occurrence		Wave (Peak 1)			Wave (Peak 2)			Current		Wind		
		N	%	Hs	Tp	Dir	Is there?	Hs	Tp	Dir	Speed	Dir	Speed	Dir
919	O0398_ESE	3	7.898270E-05	1.66	10.47	114.8	No	NaN	NaN	NaN	0.25	39	4.81	121.6
987	O0399_ESE	2	5.265514E-05	2.22	13.55	115.3	Yes	1.05	4.4	189.5	0.33	172.5	7.11	178
1151	O0400_ESE	1	2.632757E-05	1.44	9.2	115.3	Yes	0.62	4.2	55.1	0.53	309.9	5.33	56.2
2	O0401_ESE	219	5.765737E-03	2	9.68	115.5	Yes	1.07	4.99	45.6	0.31	257.9	6.88	64.1
508	O0402_ESE	14	3.685859E-04	1.77	11.81	115.6	Yes	0.51	3.47	337.2	0.38	348.4	4.57	315.8
415	O0403_ESE	6	1.579654E-04	1.44	8.23	115.9	Yes	0.52	3.75	16.7	0.26	256.7	4.82	10.9
875	O0404_ESE	1	2.632757E-05	1.34	13.7	115.9	Yes	0.38	3.4	13.5	0.84	152.8	3.86	17.6
1085	O0405_ESE	1	2.632757E-05	1.37	17.1	116.4	No	NaN	NaN	NaN	0.49	296.5	5.68	150.3
559	O0406_ESE	13	3.422584E-04	2.09	10.57	116.5	Yes	0.76	4.12	301.7	0.36	207	6.62	286.5
421	O0407_ESE	3	7.898270E-05	3.39	14.7	116.6	Yes	0.71	3.5	355.4	0.32	62.8	5.08	349.6
606	O0408_ESE	4	1.053103E-04	2.25	8.38	117.3	Yes	0.77	4.1	314.7	0.7	251.9	7.18	310.3
1102	O0409_ESE	1	2.632757E-05	1.41	4.3	117.3	No	NaN	NaN	NaN	0.2	359.4	6.85	114.5
502	O0410_ESE	7	1.842930E-04	1.74	11.63	117.4	Yes	0.53	3.44	308.6	0.3	223.3	5.16	292.9
1099	O0411_ESE	1	2.632757E-05	1.57	11.3	117.4	No	NaN	NaN	NaN	0.38	319.7	2.22	106
1117	O0412_ESE	1	2.632757E-05	3.52	11.2	117.4	Yes	0.54	3.3	44.7	0.18	185.2	5.15	356.1
940	O0413_ESE	5	1.316378E-04	3.77	9.22	117.6	Yes	1.71	8.3	92.3	0.32	225.5	12.01	97.9
78	O0414_ESE	130	3.422584E-03	1.4	8.11	117.7	Yes	0.58	3.73	22	0.22	8.1	5.32	13.3
564	O0415_ESE	9	2.369481E-04	1.76	5.76	117.7	Yes	1.18	9.02	198.8	0.14	103.8	8.28	113.7
477	O0416_ESE	30	7.898270E-04	2.85	7.37	117.8	Yes	2.23	13.06	192.7	0.45	287.1	10.87	114.8
447	O0417_ESE	7	1.842930E-04	1.35	4.93	117.9	Yes	1.08	7.73	180.8	0.14	27.3	7.1	113.3
131	O0418_ESE	16	4.212411E-04	1.58	12.37	118.2	Yes	0.65	3.94	51.3	0.45	230.9	5.13	68.5
200	O0419_ESE	6	1.579654E-04	1.57	15.97	118.2	Yes	1.01	4.63	21.4	0.3	323.7	7.31	7.9
1111	O0420_ESE	2	5.265514E-05	1.86	7.5	118.3	Yes	0.49	3.6	255.1	0.31	111.5	5.92	207.3
325	O0421_ESE	10	2.632757E-04	1.59	8.61	119	Yes	0.32	3.06	243.8	0.4	258.1	4.39	247.2
888	O0422_ESE	2	5.265514E-05	2.35	15.45	119.1	Yes	0.52	2.45	326.3	0.24	127.8	4.45	323.7
195	O0423_ESE	30	7.898270E-04	1.71	11.96	119.2	Yes	0.79	3.97	28.4	0.28	220.3	5.61	23.4
922	O0424_ESE	4	1.053103E-04	2.37	7.4	119.3	Yes	1.66	5.65	28.6	0.19	106.3	9.33	55.6
67	O0425_ESE	185	4.870600E-03	1.92	6.77	119.6	Yes	1.09	9.44	166.9	0.42	235.8	8.89	110.5
1108	O0426_ESE	1	2.632757E-05	2.95	8.1	119.6	No	NaN	NaN	NaN	0.25	129.9	10.03	110.1
386	O0427_ESE	8	2.106205E-04	2.14	14.34	119.7	Yes	0.86	4.6	98.7	0.37	224	5.93	130.1
676	O0428_ESE	3	7.898270E-05	2.37	18.1	119.8	Yes	1.41	5.03	348.4	0.61	252.4	7.9	330.5
1083	O0429_ESE	1	2.632757E-05	2.7	14.1	120.2	Yes	1.73	5.5	20.7	0.06	71.6	9.55	357.4
335	O0430_ESE	19	5.002238E-04	2.93	7.97	120.5	Yes	1.7	11.74	170.6	0.57	303.9	10.97	117.6
599	O0431_ESE	14	3.685859E-04	2.66	6.79	120.7	Yes	2.16	12.75	188.2	0.49	272.6	11.51	114.8
749	O0432_ESE	2	5.265514E-05	2.56	10.2	120.7	Yes	2.09	6.45	270.1	0.19	272.9	11.2	259.9
741	O0433_ESE	5	1.316378E-04	1.42	10.62	120.9	Yes	0.2	1.96	298.9	0.33	199.3	3.71	287.7
760	O0434_ESE	4	1.053103E-04	3.55	12.07	121	Yes	0.44	3.5	321.7	0.28	128.8	5.94	308.1
228	O0435_ESE	37	9.741200E-04	1.51	9.06	121.1	Yes	0.41	3.21	287.3	0.34	314.4	4.63	286.5
14	O0436_ESE	12	3.159308E-04	1.79	15.45	121.3	Yes	0.88	4.19	48.1	0.39	197.5	5.54	68.4
196	O0437_ESE	25	6.581892E-04	1.56	8.03	121.5	Yes	0.34	3	255	0.31	229.3	4.45	256.5
1146	O0438_ESE	1	2.632757E-05	1.92	6.7	121.5	Yes	1.86	11.6	195	0.48	248.6	9.5	109.7
588	O0439_ESE	13	3.422584E-04	2.35	12.72	121.6	Yes	1.07	4.75	327.4	0.23	33.2	6.97	313.3
897	O0440_ESE	1	2.632757E-05	2.47	8.1	121.7	Yes	2.19	6.1	8.9	0.22	120.9	11.4	345.3
391	O0441_ESE	6	1.579654E-04	2.06	9.52	121.9	Yes	0.82	4.2	285.9	0.27	200.3	6.43	284.6
1040	O0442_ESE	2	5.265514E-05	3.94	10.85	121.9	No	NaN	NaN	NaN	0.34	232.9	9.7	98.1
952	O0443_ESE	4	1.053103E-04	1.95	6.98	122.4	Yes	1.27	4.9	11.4	0.24	99	7.97	16.8
92	O0444_ESE	100	2.632757E-03	1.45	8.41	122.6	Yes	0.66	4.08	59.6	0.29	1.7	5.37	83.1
513	O0445_ESE	11	2.896032E-04	2.76	7.34	122.6	Yes	1.93	12.8	176	0.3	192	10.64	114.9
671	O0446_ESE	12	3.159308E-04	3.56	8.28	122.7	Yes	2.02	13.46	186.8	0.63	275.2	12.46	117.6
133	O0447_ESE	36	9.477924E-04	1.18	6.91	122.8	Yes	0.52	3.71	50.4	0.32	274.5	5.18	67.6



TECHNICAL REPORT

No.: **I-RL-3A00.00-1000-941-PPC-001 rev.A**

Project: **SANTOS BASIN NORTHERN PRE-SALT FIELDS**

Sheet: **74 of 89**

Title: **DURATION OF EXTREME CURRENT PROFILES AND CLUSTERS OF SIMULTANEOUS METEOCEAN CONDITIONS**

Cluster	Name	Occurrence		Wave (Peak 1)			Wave (Peak 2)			Current		Wind		
		N	%	Hs	Tp	Dir	Is there?	Hs	Tp	Dir	Speed	Dir	Speed	Dir
298	O0448_ESE	7	1.842930E-04	1.45	7.24	123.6	Yes	1.16	5.61	54.7	0.35	184.3	7.86	8
609	O0449_SE	16	4.212411E-04	2.48	7.48	124	Yes	1.36	9.22	180.3	0.17	17	9.41	118.8
903	O0450_SE	2	5.265514E-05	2.44	13.35	124.1	Yes	0.59	3.55	192.3	0.11	358.3	5.35	176.7
21	O0451_SE	280	7.371719E-03	1.53	7.71	124.2	Yes	0.64	4.38	175.9	0.31	311.2	5.48	119.9
1010	O0452_SE	6	1.579654E-04	1.91	6.17	124.3	Yes	1.61	10.27	194.2	0.44	265.9	9.71	119.2
374	O0453_SE	33	8.688097E-04	2	13.05	124.4	Yes	0.97	4.44	53.3	0.29	248.6	6.04	70.9
561	O0454_SE	7	1.842930E-04	2.14	15.31	124.4	Yes	0.97	4.33	24.4	0.22	231.2	5.82	24.8
901	O0455_SE	1	2.632757E-05	2.18	11.7	124.5	Yes	1.96	6.1	36.8	0.25	90.2	8.53	39
1031	O0456_SE	1	2.632757E-05	2	13.8	124.5	No	NaN	NaN	NaN	0.09	4	5.41	153.3
156	O0457_SE	39	1.026775E-03	2.25	12.76	124.9	Yes	1.18	4.86	21.7	0.33	210	6.95	12
1159	O0458_SE	1	2.632757E-05	1.79	8.5	124.9	Yes	0.44	3.6	15.7	0.28	252.9	4.1	0.5
1189	O0459_SE	1	2.632757E-05	2.8	13.4	124.9	Yes	0.62	3.8	2.5	0.09	356	5.08	345.1
29	O0460_SE	1088	2.864439E-02	1.59	8.64	125	Yes	0.74	4.31	70.1	0.39	252.5	5.67	91.7
74	O0461_SE	4	1.053103E-04	2.86	14.45	125.1	Yes	0.32	3.07	247	0.14	354.8	4.38	212.6
1125	O0462_SE	3	7.898270E-05	1.39	14.5	125.3	Yes	1.06	4.75	46.7	0.1	104.9	6.43	58.8
358	O0463_SE	21	5.528789E-04	2.64	10.47	125.4	Yes	1.66	5.8	52.8	0.21	108.5	8.05	77.6
695	O0464_SE	4	1.053103E-04	2.17	10.4	126	Yes	1.17	4.17	278.6	0.17	279.4	7.07	282.2
168	O0465_SE	41	1.079430E-03	2.04	12.64	126.4	Yes	0.81	4.15	125.4	0.31	288.6	5.72	131.3
280	O0466_SE	36	9.477924E-04	2.28	9.74	126.6	Yes	0.95	4.46	17.1	0.31	161.6	6.92	38.7
436	O0467_SE	6	1.579654E-04	1.89	7.88	126.8	Yes	0.95	4.07	15.4	0.57	219.5	6.28	3.8
248	O0468_SE	71	1.869257E-03	1.82	5.74	127	Yes	1.31	10.06	191	0.4	255.7	8.57	121.2
48	O0469_SE	165	4.344049E-03	2.16	6.82	127.1	Yes	1.36	9.9	187	0.39	296.7	9.25	122.7
1114	O0470_SE	1	2.632757E-05	1.41	13	127.1	No	NaN	NaN	NaN	0.44	274.9	4.76	89.4
776	O0471_SE	6	1.579654E-04	1.53	10.63	127.2	Yes	0.45	3.4	336.7	0.32	202.3	4.51	320.7
849	O0472_SE	2	5.265514E-05	2.23	13.35	127.3	Yes	0.86	3.95	2.9	0.22	105.8	5.82	2.1
123	O0473_SE	54	1.421689E-03	1.98	14.54	127.9	Yes	1.02	4.65	36	0.32	223.3	6.26	38.5
274	O0474_SE	27	7.108443E-04	1.42	8.9	128.2	Yes	0.5	3.6	212	0.27	45.9	5.01	173.3
381	O0475_SE	4	1.053103E-04	1.3	6.9	128.3	Yes	0.45	3.57	237.6	0.25	13	4.11	232.5
584	O0476_SE	7	1.842930E-04	1.56	12.69	128.5	Yes	1.12	5.06	56.6	0.24	274.4	6.36	66.8
994	O0477_SE	2	5.265514E-05	1.98	14.9	128.5	Yes	0.89	4.85	38.3	0.1	127.1	6.25	36.3
535	O0478_SE	13	3.422584E-04	2.05	13.14	128.6	Yes	0.67	3.86	24.6	0.26	6.7	5.15	49
1025	O0479_SE	3	7.898270E-05	1.37	9.17	128.6	No	0	0.2	191.8	0.3	278	4.35	163.3
531	O0480_SE	4	1.053103E-04	2.04	11.95	128.7	No	NaN	NaN	NaN	0.14	125.6	4.59	139.4
979	O0481_SE	1	2.632757E-05	2.19	12.5	129.2	No	NaN	NaN	NaN	0.22	181.6	5.28	170.1
521	O0482_SE	9	2.369481E-04	1.64	11.54	129.3	Yes	0.46	3.54	237.4	0.34	351.9	4.63	231
889	O0483_SE	6	1.579654E-04	1.15	7.32	129.4	Yes	0.84	5.02	55.6	0.24	63.5	5.99	64.5
778	O0484_SE	4	1.053103E-04	2.27	11.55	129.5	Yes	1.06	4.72	313.7	0.23	243.5	7.59	306.2
243	O0485_SE	48	1.263723E-03	1.8	7.39	129.8	Yes	1.01	5.75	80.3	0.37	227.8	7.17	109
251	O0486_SE	35	9.214649E-04	1.24	7.45	130.1	Yes	0.52	3.74	42	0.31	302.8	4.82	42
557	O0487_SE	3	7.898270E-05	2.86	9.57	130.1	Yes	2.1	6.1	60.9	0.18	20.8	10.97	40.8
816	O0488_SE	5	1.316378E-04	2.72	13.52	130.1	Yes	1.14	4.6	350.6	0.22	225.7	6.87	333.7
736	O0489_SE	1	2.632757E-05	2.57	14.7	130.2	Yes	0.78	3.8	85	0.26	246.5	5.52	76.3
829	O0490_SE	2	5.265514E-05	2.39	15	130.9	No	0	0.85	290.4	0.23	65.2	2.84	290.3
1160	O0491_SE	1	2.632757E-05	1.96	17.2	131	No	0	0.5	200.4	0.17	69.5	2.56	200.4
548	O0492_SE	10	2.632757E-04	2.65	10.95	131.1	Yes	1.91	6.1	84.2	0.45	301.1	9.08	96.7
199	O0493_SE	65	1.711292E-03	1.68	8.52	131.3	Yes	0.58	3.65	225.5	0.28	31.9	5.43	213.5
90	O0494_SE	252	6.634547E-03	1.73	9.71	131.5	Yes	0.76	4.28	91.5	0.35	269.1	5.65	113.6
544	O0495_SE	8	2.106205E-04	2.07	11.4	131.5	Yes	0.77	4.26	60.9	0.19	21.3	5.49	81.6
604	O0496_SE	12	3.159308E-04	1.37	8.36	131.5	Yes	0.59	3.97	29.2	0.35	127.1	5	41.6
1082	O0497_SE	4	1.053103E-04	1.25	10.18	131.5	Yes	0.68	3.75	341.1	0.18	75	6.33	329.5



TECHNICAL REPORT

No.: **I-RL-3A00.00-1000-941-PPC-001 rev.A**

Project: **SANTOS BASIN NORTHERN PRE-SALT FIELDS**

Sheet: **75 of 89**

Title: **DURATION OF EXTREME CURRENT PROFILES AND CLUSTERS OF SIMULTANEOUS METEOCEAN CONDITIONS**

Cluster	Name	Occurrence		Wave (Peak 1)			Wave (Peak 2)			Current		Wind		
		N	%	Hs	Tp	Dir	Is there?	Hs	Tp	Dir	Speed	Dir	Speed	Dir
684	O0498_SE	1	2.632757E-05	1.64	18.2	131.6	No	0	0.5	201.7	0.36	321.7	2.62	201.7
712	O0499_SE	7	1.842930E-04	1.59	12.89	131.7	Yes	0.23	2.2	196	0.32	325.2	4	175.3
1064	O0500_SE	2	5.265514E-05	1.86	11.1	131.8	Yes	1.76	5.95	47.3	0.17	42.3	9.5	36.6
850	O0501_SE	3	7.898270E-05	1.59	12.7	131.9	Yes	0.47	3.5	331.6	0.27	12.8	5.63	326.9
581	O0502_SE	8	2.106205E-04	1.72	8.39	132.2	Yes	1.24	5.16	26.8	0.4	8.7	7.99	17.3
1019	O0503_SE	1	2.632757E-05	1.7	14	132.3	Yes	1.67	7	225.8	0.9	320.9	8.78	227.2
364	O0504_SE	12	3.159308E-04	1.4	13.12	132.4	Yes	0.56	3.88	21	0.41	173.4	5.05	17
118	O0505_SE	125	3.290946E-03	1.82	6.21	132.5	Yes	1.06	8.12	165.5	0.4	262.2	8.27	128.6
406	O0506_SE	2	5.265514E-05	1.89	17.3	132.7	Yes	0.37	3.35	348.1	0.06	135	4.57	323.8
1068	O0507_SE	4	1.053103E-04	3.56	15.38	132.8	Yes	2.22	6.03	26.1	0.24	145.5	9.82	15.8
89	O0508_SE	26	6.845168E-04	1.83	6.48	132.9	Yes	0.95	6.42	93	0.26	163.7	7.67	120.2
51	O0509_SE	127	3.343601E-03	1.46	9.93	133	Yes	0.66	3.96	44.5	0.33	227.5	5.45	48.9
554	O0510_SE	1	2.632757E-05	1.41	6.1	133	Yes	1.26	4.8	15.7	0.58	180	8.89	356.1
805	O0511_SE	1	2.632757E-05	2.55	9.9	133.8	Yes	0.66	3.3	348.7	0.22	257.2	11.08	315.3
1	O0512_SE	256	6.739857E-03	1.97	10.58	133.9	Yes	0.92	4.49	66.1	0.32	239.4	6.33	88.5
909	O0513_SE	2	5.265514E-05	2.72	14.5	134	Yes	0.46	3.6	191.5	0.19	202.4	4.84	180.8
616	O0514_SE	13	3.422584E-04	1.94	11.72	134.2	Yes	1.02	4.23	21.8	0.25	328.6	6.32	19
300	O0515_SE	31	8.161546E-04	2.88	10.5	134.5	Yes	1.24	4.68	252	0.36	296.5	7.78	143.1
493	O0516_SE	14	3.685859E-04	2.71	14.41	134.6	Yes	1.88	6.01	66.3	0.15	213.5	9.02	59.3
204	O0517_SE	10	2.632757E-04	1.77	13.83	135	Yes	1.04	4.43	25.3	0.4	192.8	6.61	17.3
395	O0518_SE	8	2.106205E-04	2.84	15.31	135.1	No	NaN	NaN	NaN	0.3	232.3	6.57	130.6
490	O0519_SE	10	2.632757E-04	2.21	15.25	135.1	Yes	1.21	4.9	31.5	0.23	298.8	7.14	49.4
233	O0520_SE	28	7.371719E-04	1.55	9.12	135.2	Yes	0.78	4.52	54	0.3	40	5.67	66.6
810	O0521_SE	1	2.632757E-05	2.08	18.4	135.3	No	NaN	NaN	NaN	0.19	220	6.26	118.8
945	O0522_SE	1	2.632757E-05	1.26	16.1	135.5	Yes	1.15	4.6	24.5	0.29	209.9	8.23	4.7
860	O0523_SE	4	1.053103E-04	3	9.13	135.6	Yes	1.3	5	177.5	0.61	299.8	8.72	180.6
1008	O0524_SE	1	2.632757E-05	1.27	17.5	136.1	Yes	1.11	5.3	50	0.16	227.6	6.78	50.5
528	O0525_SE	15	3.949135E-04	2.5	14	136.2	Yes	1.75	5.77	43.9	0.33	215.6	8.75	37
937	O0526_SE	2	5.265514E-05	1.62	14	136.5	Yes	0.63	3.95	264.7	0.21	316.3	5.23	257.5
742	O0527_SE	3	7.898270E-05	1.66	12.1	136.7	Yes	0.91	5.2	228.5	0.37	10.9	5.99	203.1
1107	O0528_SE	1	2.632757E-05	1.66	5.7	136.7	Yes	1.45	10.8	196.7	0.11	120.4	9.14	126.8
831	O0529_SE	2	5.265514E-05	2.25	9.9	136.8	Yes	1.83	6.8	194.4	0.15	139.3	8.25	178.3
733	O0530_SE	10	2.632757E-04	1.45	5.1	137	Yes	0.93	6.72	150.2	0.61	277.4	7.87	136.2
1165	O0531_SE	1	2.632757E-05	1.13	9.5	137	Yes	1.08	6	36.9	0.22	209.1	7.84	18.8
835	O0532_SE	3	7.898270E-05	1.95	16.9	137.4	Yes	0.51	3.93	56	0.18	10.2	5.1	50.6
1072	O0533_SE	1	2.632757E-05	1.64	7.5	137.4	No	0	0	296.9	0.5	203.6	1.44	296.9
573	O0534_SE	9	2.369481E-04	1.94	8.3	137.5	Yes	1.1	4.82	46.5	0.23	107.8	6.57	84.6
673	O0535_SE	1	2.632757E-05	1.88	15.9	137.5	No	0	0.9	206.4	0.36	287.1	2.87	206.4
1007	O0536_SE	1	2.632757E-05	1.98	9.2	137.5	Yes	1.53	6.1	260.2	0.3	281.2	8.16	260.8
869	O0537_SE	2	5.265514E-05	3.62	14	137.6	No	NaN	NaN	NaN	0.13	333.5	6.85	103
1177	O0538_SE	1	2.632757E-05	1.81	9.8	137.7	Yes	1.1	4.5	28.1	0.21	221.1	7.16	7.9
787	O0539_SE	1	2.632757E-05	2.08	12	137.9	Yes	1.87	4	239.8	0.16	219.4	9.93	245.1
1164	O0540_SE	1	2.632757E-05	2.65	7.5	138.1	No	NaN	NaN	NaN	0.29	128.6	9.93	132.5
580	O0541_SE	6	1.579654E-04	1.96	15.85	138.2	Yes	1.2	4.65	354.7	0.33	185.1	8	343.2
376	O0542_SE	12	3.159308E-04	1.67	11.62	138.7	Yes	0.44	3.38	276.6	0.26	210.3	5.07	259.9
377	O0543_SE	1	2.632757E-05	1.29	20.4	138.9	No	NaN	NaN	NaN	0.33	290.2	6.15	98.1
401	O0544_SE	12	3.159308E-04	2.02	12.19	138.9	Yes	0.52	3.68	292.8	0.36	277.5	5.94	292.1
62	O0545_SE	175	4.607324E-03	2.08	9.11	139	Yes	1.14	5.27	74.9	0.34	233.1	6.97	96.3
320	O0546_SE	5	1.316378E-04	4.14	14.24	139	No	NaN	NaN	NaN	0.17	48.8	7.21	124.2
744	O0547_SE	8	2.106205E-04	2.4	12.63	139	Yes	0.94	4.65	34.7	0.16	56.9	6.67	14.4



TECHNICAL REPORT

No.: **I-RL-3A00.00-1000-941-PPC-001 rev.A**

Project: **SANTOS BASIN NORTHERN PRE-SALT FIELDS**

Sheet: **76 of 89**

Title: **DURATION OF EXTREME CURRENT PROFILES AND CLUSTERS OF SIMULTANEOUS METEOCEAN CONDITIONS**

Cluster	Name	Occurrence		Wave (Peak 1)			Wave (Peak 2)			Current		Wind		
		N	%	Hs	Tp	Dir	Is there?	Hs	Tp	Dir	Speed	Dir	Speed	Dir
212	O0548_SE	33	8.688097E-04	1.64	8.62	139.6	Yes	0.47	3.19	271.2	0.32	258.7	4.98	285.5
972	O0549_SE	1	2.632757E-05	1.39	12.1	139.6	Yes	0.18	2.4	315.4	0.45	259.1	4.25	306.1
523	O0550_SE	4	1.053103E-04	2.06	11.4	140.1	Yes	0.87	4.35	227.6	0.41	23.8	6.65	226.1
110	O0551_SE	27	7.108443E-04	2.69	13.25	140.7	Yes	1.78	5.81	50.8	0.37	205.7	7.76	70.6
189	O0552_SE	28	7.371719E-04	2.09	9.71	141	Yes	1.15	4.97	43.4	0.27	283.6	7.62	48.2
659	O0553_SE	6	1.579654E-04	2.89	9.97	141	Yes	1.69	6.1	198.8	0.3	191.3	7.88	153.4
700	O0554_SE	1	2.632757E-05	2.76	14.6	141.2	Yes	2.04	6.6	69.3	0.26	301.3	9.35	55.2
409	O0555_SE	4	1.053103E-04	3.2	15.73	141.4	Yes	0.69	3.7	332.4	0.43	225.2	4.75	314.1
1077	O0556_SE	1	2.632757E-05	2.7	12.8	141.4	Yes	2.18	6.2	5.5	0.32	67.7	9.17	4.8
892	O0557_SE	2	5.265514E-05	2.98	10.65	141.6	No	NaN	NaN	NaN	0.25	210.9	7.04	163.3
146	O0558_SE	60	1.579654E-03	1.75	10.66	141.7	Yes	1.1	4.92	38.9	0.21	62	6.69	46.5
211	O0559_SE	17	4.475686E-04	2.87	9.65	141.8	Yes	1.75	6.47	177.8	0.31	349.6	8.51	164.1
281	O0560_SE	43	1.132085E-03	1.76	7.83	141.8	Yes	1.04	4.83	61.6	0.39	236.3	6.17	107.8
796	O0561_SE	1	2.632757E-05	1.84	12.2	141.8	Yes	0.55	3.6	260.9	0.42	351.6	5.24	277.4
95	O0562_SE	174	4.580997E-03	1.61	10.69	142	Yes	0.77	4.25	50.9	0.31	230.9	5.68	56.5
593	O0563_SE	6	1.579654E-04	2.39	15.03	142	Yes	0.13	1.7	210.8	0.24	323.8	5.66	162.4
877	O0564_SE	1	2.632757E-05	3.58	9.8	142.1	Yes	2.04	6.1	81.9	0.19	299.2	8.91	73
788	O0565_SE	1	2.632757E-05	1.21	6.8	142.2	Yes	0.36	3.3	290.7	0.21	237.7	3.78	285.4
5	O0566_SE	45	1.184741E-03	1.89	12.86	142.4	Yes	0.63	3.7	349.4	0.39	209.1	5.46	333.4
767	O0567_SE	1	2.632757E-05	4.09	13.4	142.5	No	NaN	NaN	NaN	0.11	293.9	8.27	148.9
441	O0568_SE	10	2.632757E-04	2.55	13.63	142.8	Yes	0.68	4.33	270	0.23	43.2	5.6	210.8
537	O0569_SE	8	2.106205E-04	2.49	6.81	142.8	Yes	1.8	11.34	197.6	0.22	197.2	9.95	139.9
666	O0570_SE	7	1.842930E-04	2.38	13.81	143	Yes	0.91	3.76	30.1	0.24	261	6.52	14.6
784	O0571_SE	12	3.159308E-04	2.04	10.62	143	Yes	1.32	5.22	21.5	0.33	199.4	7.86	17
1128	O0572_SE	2	5.265514E-05	3.05	15.35	143	Yes	2.03	6.75	72.9	0.32	327.2	9.32	61.8
208	O0573_SE	75	1.974568E-03	1.71	9.69	143.1	Yes	0.88	4.48	50.7	0.26	107.6	6.19	47.9
1039	O0574_SE	2	5.265514E-05	2.91	12.85	143.1	Yes	1.62	5.5	214.1	0.57	278	7.96	182.1
698	O0575_SE	5	1.316378E-04	3.86	11.74	143.3	No	NaN	NaN	NaN	0.27	331.6	9.36	128.8
1052	O0576_SE	2	5.265514E-05	1.06	7.7	143.4	Yes	0.56	4.25	52.6	0.22	250.2	5.32	23.6
1006	O0577_SE	3	7.898270E-05	2.68	11.73	143.9	Yes	1.91	6.35	78.5	0.46	262.7	9.56	83.2
206	O0578_SE	75	1.974568E-03	1.72	11.37	144	Yes	0.86	4.25	43.4	0.36	227.5	6.18	46.5
226	O0579_SE	17	4.475686E-04	1.81	13.74	144.4	Yes	0.54	3.71	68.3	0.33	273.3	4.86	82.6
1069	O0580_SE	1	2.632757E-05	2.37	15.3	144.4	No	NaN	NaN	NaN	0.27	256.1	6.11	137.6
31	O0581_SE	267	7.029461E-03	1.39	7.57	144.5	Yes	0.68	4.27	74.3	0.4	244.3	5.58	95.7
144	O0582_SE	122	3.211963E-03	1.85	11.8	144.6	Yes	0.98	4.46	36.1	0.33	166.3	6.52	28.2
790	O0583_SE	4	1.053103E-04	2.36	10.98	145	Yes	2.17	6.15	55.3	0.12	117	11.2	39.6
155	O0584_SE	87	2.290498E-03	1.86	9.52	145.1	Yes	0.73	4.21	171.5	0.22	57.3	5.28	152
620	O0585_SE	3	7.898270E-05	2.59	8.93	145.1	Yes	1.76	6.3	30.9	0.36	315.3	8.7	19.2
172	O0586_SE	60	1.579654E-03	1.48	8.93	145.3	Yes	0.75	4.22	54.9	0.32	168.2	6.01	49.3
913	O0587_SE	2	5.265514E-05	2.94	14.25	145.3	Yes	0.3	2.95	306.4	0.24	169.6	3.59	282.6
53	O0588_SE	18	4.738962E-04	1.65	5.28	145.9	Yes	1.02	7.85	98.8	0.38	209.6	7.98	141.4
1092	O0589_SE	1	2.632757E-05	2.58	12.7	145.9	Yes	0.64	3.3	346.4	0.55	208.6	4.71	333.7
672	O0590_SE	3	7.898270E-05	1.2	4.33	146.1	Yes	0.98	8.15	77.1	0.39	264.2	7.61	142.4
1176	O0591_SE	1	2.632757E-05	3.04	14.5	146.1	Yes	0.28	3.3	261	0.22	27.9	5.02	251.1
677	O0592_SSE	1	2.632757E-05	1.4	9	146.3	Yes	0.42	3.3	321.8	0.2	131.4	4.24	293.7
765	O0593_SSE	4	1.053103E-04	2.23	8.5	146.6	Yes	1.23	4.85	284.7	0.26	52.5	7.94	290.1
516	O0594_SSE	14	3.685859E-04	2.17	6.18	146.8	Yes	1.75	10.33	202.2	0.4	249.8	10.24	139
1029	O0595_SSE	2	5.265514E-05	1.41	6.85	146.8	No	NaN	NaN	NaN	0.27	278.3	5.05	136.5
188	O0596_SSE	29	7.634995E-04	2.29	12.33	146.9	Yes	1.43	5.41	49.8	0.31	203.7	7.78	48.7
47	O0597_SSE	143	3.764842E-03	2.49	7.37	147.1	Yes	1.22	8.84	173.5	0.37	265.4	9.96	143



TECHNICAL REPORT

No.: **I-RL-3A00.00-1000-941-PPC-001 rev.A**

Project: **SANTOS BASIN NORTHERN PRE-SALT FIELDS**

Sheet: **77 of 89**

Title: **DURATION OF EXTREME CURRENT PROFILES AND CLUSTERS OF SIMULTANEOUS METEOCEAN CONDITIONS**

Cluster	Name	Occurrence		Wave (Peak 1)			Wave (Peak 2)			Current		Wind		
		N	%	Hs	Tp	Dir	Is there?	Hs	Tp	Dir	Speed	Dir	Speed	Dir
939	O0598_SSE	1	2.632757E-05	1.46	7.5	147.1	Yes	0.99	5	198.2	0.92	258.5	6.52	194.7
681	O0599_SSE	4	1.053103E-04	1.21	8.25	147.5	Yes	0.91	5.2	65.2	0.17	17.8	6.24	80.9
1110	O0600_SSE	1	2.632757E-05	2.09	6.9	147.8	Yes	1.99	9.6	206.4	0.18	229.7	9.71	136.3
803	O0601_SSE	2	5.265514E-05	3.03	16.55	148.2	Yes	1.15	4.75	255.3	0.36	156.4	7.19	269.4
379	O0602_SSE	22	5.792065E-04	1.48	7.63	148.3	Yes	0.7	4.82	79.7	0.21	78.3	5.76	93.3
437	O0603_SSE	14	3.685859E-04	1.84	10.84	148.3	Yes	0.81	4.35	237.1	0.29	191.3	6.38	229
789	O0604_SSE	6	1.579654E-04	2.83	13.33	148.3	Yes	1.71	5.45	328.3	0.35	31.3	9.57	307.4
878	O0605_SSE	2	5.265514E-05	1.47	17	148.9	Yes	0.97	4.8	63.5	0.28	196.9	6.42	57.5
296	O0606_SSE	17	4.475686E-04	1.72	10.14	149.1	Yes	1.06	4.62	47.5	0.23	304.7	6.72	41.9
572	O0607_SSE	15	3.949135E-04	2.08	12.84	149.1	Yes	0.68	3.83	250.3	0.27	15.1	6.23	218.2
246	O0608_SSE	8	2.106205E-04	3.1	17.06	149.2	Yes	1.13	4.91	238.4	0.58	268.5	7.49	234.8
791	O0609_SSE	2	5.265514E-05	2.89	16.1	149.3	Yes	1.04	4.4	247.9	0.16	50.2	6.44	250.8
241	O0610_SSE	24	6.318616E-04	3.21	8.58	149.9	Yes	1.51	8.1	102.6	0.39	280.1	10.9	142.7
724	O0611_SSE	7	1.842930E-04	2.02	15.47	149.9	Yes	1.27	4.81	2.2	0.41	193.5	7.73	357.4
689	O0612_SSE	5	1.316378E-04	2.45	11.8	150.1	No	NaN	NaN	NaN	0.28	276.1	5.39	162.1
1105	O0613_SSE	3	7.898270E-05	1.57	10.33	150.6	Yes	0.51	3.3	325.5	0.24	92.8	5.38	325.5
619	O0614_SSE	4	1.053103E-04	2.81	8	150.9	No	NaN	NaN	NaN	0.16	324.5	9.49	164.5
354	O0615_SSE	4	1.053103E-04	3.17	14.5	151	Yes	1.97	5.63	335	0.36	128.7	10.3	319.8
489	O0616_SSE	10	2.632757E-04	1.25	9.9	151	Yes	0.35	3.27	198.1	0.45	278.4	4.23	173.6
655	O0617_SSE	2	5.265514E-05	1.37	19.15	151	Yes	0.95	4.6	101.9	0.46	281.3	4.96	84.9
383	O0618_SSE	19	5.002238E-04	2	8.74	151.1	Yes	1.36	5.72	107.3	0.23	19.7	7.21	116.1
33	O0619_SSE	300	7.898270E-03	1.58	9	151.2	Yes	0.77	4.52	72.5	0.3	301.3	5.81	95.2
372	O0620_SSE	8	2.106205E-04	1.48	9.35	151.3	Yes	0.44	2.94	256.6	0.35	261.2	4.76	259.5
66	O0621_SSE	131	3.448911E-03	2.14	8.27	151.6	Yes	1.18	5.36	82.7	0.35	236	7.55	104.3
161	O0622_SSE	16	4.212411E-04	2.11	14.06	152	Yes	0.91	4.48	83.8	0.34	251.1	5.96	96
157	O0623_SSE	55	1.448016E-03	1.45	8.17	152.2	Yes	0.68	4.3	34.6	0.27	144.8	5.87	24.8
534	O0624_SSE	7	1.842930E-04	1.76	9.1	152.3	Yes	1.2	5.04	44	0.22	14.9	7.43	34.1
54	O0625_SSE	139	3.659532E-03	2.11	11.46	152.4	Yes	1.13	5.02	82.3	0.37	209.8	6.87	91.1
230	O0626_SSE	24	6.318616E-04	1.76	10.1	152.4	Yes	0.46	3.7	240.4	0.24	114.7	4.77	203.5
109	O0627_SSE	177	4.659979E-03	2.17	9.92	152.7	Yes	1.12	5.15	98.3	0.36	290.5	6.78	123.2
541	O0628_SSE	13	3.422584E-04	1.92	15.07	153	Yes	1.17	5.38	36.9	0.37	210.6	7.38	41.2
1053	O0629_SSE	3	7.898270E-05	2.33	6.37	153.1	No	NaN	NaN	NaN	0.21	15.7	9.17	148.4
216	O0630_SSE	31	8.161546E-04	2.03	5.75	153.2	Yes	1.23	7.67	152.9	0.35	327.1	8.97	146
232	O0631_SSE	35	9.214649E-04	2.09	11.57	153.2	Yes	1.22	4.84	20.2	0.45	210.1	7.75	7.3
1139	O0632_SSE	1	2.632757E-05	1.22	15.3	153.3	Yes	0.86	4.9	15.5	0.15	134.4	6.47	14.6
1143	O0633_SSE	1	2.632757E-05	2.71	12.9	153.5	Yes	2.09	6.1	9.6	0.3	246.8	10.01	349.2
563	O0634_SSE	7	1.842930E-04	3.99	15.96	153.6	Yes	2.16	6.12	57.3	0.17	81.7	9.37	66.1
193	O0635_SSE	12	3.159308E-04	3.11	9.81	153.8	Yes	1.96	6.65	74.3	0.17	181	9.04	118.3
269	O0636_SSE	44	1.158413E-03	1.92	10.97	153.8	Yes	0.84	4.3	327.8	0.25	1	6.53	321.1
941	O0637_SSE	1	2.632757E-05	2.16	15.9	154.2	Yes	1.99	6.1	34.2	0.13	302.8	10.05	16
1060	O0638_SSE	3	7.898270E-05	2.43	12.07	154.2	Yes	1.63	5.57	35.7	0.11	125.7	8.42	22.4
154	O0639_SSE	35	9.214649E-04	1.61	8.77	154.5	Yes	0.78	4.38	203.5	0.26	236.1	5.88	194.9
647	O0640_SSE	2	5.265514E-05	2.22	14.9	154.6	Yes	0.14	1.5	280.9	0.19	158.5	2.52	287.7
984	O0641_SSE	2	5.265514E-05	2.52	11.2	154.7	Yes	0.55	3.6	225	0.23	222.8	5.09	231.6
191	O0642_SSE	21	5.528789E-04	2.4	9.78	154.9	Yes	0.91	4.86	89.7	0.2	101.8	7.35	108.1
505	O0643_SSE	22	5.792065E-04	2.34	13.12	155	Yes	0.72	3.75	78	0.23	187.5	5.84	89.4
509	O0644_SSE	9	2.369481E-04	3.71	16.09	155.2	Yes	2.34	6.79	91.1	0.41	316.8	9.26	88.6
1044	O0645_SSE	1	2.632757E-05	1.69	12.7	155.2	No	NaN	NaN	NaN	0.41	283.8	5.43	182.1
1120	O0646_SSE	3	7.898270E-05	1.13	11.97	155.3	Yes	0.48	4.07	77.4	0.2	88.1	5.05	65.6
1054	O0647_SSE	4	1.053103E-04	1.92	7.55	155.4	Yes	1.39	6.1	222.8	0.18	83.4	7.45	160.6



TECHNICAL REPORT

No.: **I-RL-3A00.00-1000-941-PPC-001 rev.A**

Project: **SANTOS BASIN NORTHERN PRE-SALT FIELDS**

Sheet: **78 of 89**

Title: **DURATION OF EXTREME CURRENT PROFILES AND CLUSTERS OF SIMULTANEOUS METEOCEAN CONDITIONS**

Cluster	Name	Occurrence		Wave (Peak 1)			Wave (Peak 2)			Current		Wind		
		N	%	Hs	Tp	Dir	Is there?	Hs	Tp	Dir	Speed	Dir	Speed	Dir
126	O0648_SSE	81	2.132533E-03	1.89	12.73	155.5	Yes	0.74	4.21	69.5	0.35	242.3	5.51	75.1
770	O0649_SSE	7	1.842930E-04	4.2	16.66	155.6	Yes	1.84	5.6	76.4	0.11	148.3	9.76	61.5
988	O0650_SSE	1	2.632757E-05	2.8	15.8	155.7	Yes	0.51	3.6	228.1	0.36	263.4	4.29	231.7
1081	O0651_SSE	1	2.632757E-05	2.41	15.4	155.7	No	NaN	NaN	NaN	0.4	349.8	5.64	123.5
685	O0652_SSE	4	1.053103E-04	1.93	15.88	155.8	Yes	0.75	3.92	34.9	0.3	18	5.92	26.4
722	O0653_SSE	2	5.265514E-05	1.71	13.35	155.8	Yes	0.82	4.25	36.1	0.36	180.6	5.81	39.1
476	O0654_SSE	17	4.475686E-04	1.85	11.98	156	Yes	1.05	4.76	53.2	0.36	243.2	6.63	75.3
491	O0655_SSE	8	2.106205E-04	3.82	12.9	156	Yes	2.13	7	108.3	0.58	264.8	8.79	135.2
483	O0656_SSE	12	3.159308E-04	1.73	9.77	156.4	Yes	0.49	3.57	242	0.38	279.4	5.49	182.3
1004	O0657_SSE	1	2.632757E-05	5.32	13.2	156.4	No	NaN	NaN	NaN	0.69	251	12.02	191.9
852	O0658_SSE	3	7.898270E-05	3.76	9.03	156.5	No	NaN	NaN	NaN	0.28	180.5	11.85	162.4
443	O0659_SSE	1	2.632757E-05	2.34	8.4	156.6	Yes	1.43	4.6	295.2	0.37	229.5	8.53	316.5
547	O0660_SSE	2	5.265514E-05	2.46	12.8	156.8	Yes	1.89	6.25	160.3	0.51	292.8	8.79	158.1
179	O0661_SSE	28	7.371719E-04	2.19	13.69	157.5	Yes	0.83	4.23	35.5	0.31	348.8	5.87	26.4
285	O0662_SSE	60	1.579654E-03	1.91	10.72	157.5	Yes	0.84	4.44	206.6	0.29	317.4	5.86	170.9
759	O0663_SSE	2	5.265514E-05	1.35	9.65	157.6	No	NaN	NaN	NaN	0.59	303.1	4.34	147.4
32	O0664_SSE	415	1.092594E-02	1.54	8.29	158	Yes	0.78	4.6	78.5	0.35	246.9	5.98	94.2
130	O0665_SSE	21	5.528789E-04	1.42	7.52	158	Yes	0.52	3.57	187.5	0.3	11.4	5.07	146.7
576	O0666_SSE	3	7.898270E-05	1.59	17.4	158.1	Yes	0.96	4.2	50.9	0.29	240.8	6.66	35.4
567	O0667_SSE	18	4.738962E-04	2.17	12.96	158.2	Yes	0.99	5.09	208.8	0.39	289.9	6.76	184.9
530	O0668_SSE	7	1.842930E-04	2.01	11.54	158.4	Yes	1.61	5.8	55.2	0.39	325.1	8.77	44.9
1032	O0669_SSE	1	2.632757E-05	2.49	5.7	158.8	No	NaN	NaN	NaN	0.22	223.6	9.95	143
526	O0670_SSE	4	1.053103E-04	1.46	4.75	158.9	Yes	1.1	8.3	85.3	0.42	314.1	8.23	151.7
360	O0671_SSE	4	1.053103E-04	2.04	5.1	159	Yes	1.08	7.9	60.4	0.27	340.8	10.69	154.9
640	O0672_SSE	5	1.316378E-04	2.37	9.16	159.2	No	NaN	NaN	NaN	0.13	142.8	7.74	147.9
959	O0673_SSE	5	1.316378E-04	3.96	9.2	159.2	Yes	0.59	9.1	72.5	0.37	324.4	12.74	162.2
1104	O0674_SSE	1	2.632757E-05	2.22	13.7	159.5	No	NaN	NaN	NaN	0.1	209.2	5.65	140.6
313	O0675_SSE	31	8.161546E-04	1.88	12.72	159.6	Yes	1.07	4.81	64.2	0.26	141.3	6.9	61.5
930	O0676_SSE	2	5.265514E-05	4.07	16.55	159.9	Yes	1.96	5.85	96.4	0.22	14.7	9.3	87.6
826	O0677_SSE	5	1.316378E-04	2.24	14.56	160	Yes	1.15	4.62	20.3	0.28	51.7	6.83	15.1
367	O0678_SSE	7	1.842930E-04	1.23	7.07	160.1	Yes	0.55	4.62	69.2	0.4	255.4	5.25	95.6
570	O0679_SSE	11	2.896032E-04	2.22	14.37	160.2	Yes	1.28	5.06	73.5	0.26	23.9	7.23	80.2
596	O0680_SSE	5	1.316378E-04	2.23	12.2	160.3	Yes	1.78	5.53	75.2	0.14	19.8	8.19	96.1
229	O0681_SSE	76	2.000895E-03	1.91	8.75	160.4	Yes	0.67	4.23	219.2	0.25	23.4	5.86	194.4
743	O0682_SSE	3	7.898270E-05	1.17	8.77	160.6	Yes	0.6	4.8	83.8	0.19	71.4	5.44	88.9
654	O0683_SSE	2	5.265514E-05	2.29	13.3	160.8	Yes	1.74	5.8	85	0.33	334.8	9.06	77.3
439	O0684_SSE	15	3.949135E-04	1.46	8.07	160.9	Yes	0.82	4.42	241.2	0.4	333.2	6.03	246.6
661	O0685_SSE	7	1.842930E-04	2.56	13.2	161.1	Yes	1.18	4.74	336.1	0.29	357.3	6.85	326.5
70	O0686_SSE	8	2.106205E-04	2.95	13.9	161.2	Yes	1.52	6.02	253.7	0.34	323	8.17	211.7
61	O0687_SSE	92	2.422136E-03	2.01	12	161.4	Yes	1.02	4.64	46.3	0.25	32.3	6.69	43.9
652	O0688_SSE	7	1.842930E-04	2.47	10.93	161.4	Yes	0.14	1.55	234.3	0.4	319.2	6.41	189.5
881	O0689_SSE	4	1.053103E-04	1.56	5.75	161.4	Yes	1.02	8.95	103.2	0.29	274	8.29	156.9
329	O0690_SSE	17	4.475686E-04	1.6	9.86	161.5	Yes	0.79	4.27	58.2	0.27	237.8	6.02	55.9
510	O0691_SSE	6	1.579654E-04	1.87	15.47	161.6	Yes	0.84	4.4	94.4	0.31	328.8	5.79	132.1
1155	O0692_SSE	2	5.265514E-05	2.45	12.75	161.7	Yes	1.26	4.6	344.5	0.21	74	5.65	338.2
1192	O0693_SSE	1	2.632757E-05	2.47	14.5	161.8	No	NaN	NaN	NaN	0.34	336.2	8.1	119
818	O0694_SSE	9	2.369481E-04	2.36	10.68	161.9	Yes	1.17	4.85	111.5	0.5	210.5	6.56	152.3
487	O0695_SSE	7	1.842930E-04	2.03	9.83	162	No	NaN	NaN	NaN	0.38	221.6	6.56	157.1
969	O0696_SSE	4	1.053103E-04	2.23	14.85	162	Yes	1.63	5.45	27.8	0.36	189.5	8.18	20.5
287	O0697_SSE	16	4.212411E-04	2.92	7.89	162.2	Yes	1.9	7.3	192.6	0.39	259.1	10.07	160.4



TECHNICAL REPORT

No.: **I-RL-3A00.00-1000-941-PPC-001 rev.A**

Project: **SANTOS BASIN NORTHERN PRE-SALT FIELDS**

Sheet: **79 of 89**

Title: **DURATION OF EXTREME CURRENT PROFILES AND CLUSTERS OF SIMULTANEOUS METEOCEAN CONDITIONS**

Cluster	Name	Occurrence		Wave (Peak 1)			Wave (Peak 2)			Current		Wind		
		N	%	Hs	Tp	Dir	Is there?	Hs	Tp	Dir	Speed	Dir	Speed	Dir
626	O0698_SSE	3	7.898270E-05	1.89	10.37	162.3	Yes	1.59	5.5	53.3	0.19	122.2	9.05	39.4
976	O0699_SSE	1	2.632757E-05	1.6	9.7	162.3	No	NaN	NaN	NaN	0.29	225.7	4.79	143.1
1142	O0700_SSE	1	2.632757E-05	3.69	7.3	162.5	No	NaN	NaN	NaN	0.17	81.9	10.13	172.3
356	O0701_SSE	28	7.371719E-04	1.67	11.51	163	Yes	0.86	4.22	52.4	0.2	20.4	6.28	43.7
612	O0702_SSE	5	1.316378E-04	2.58	15.74	163	Yes	1.85	6.14	41.9	0.46	191.6	8.92	33.1
954	O0703_SSE	2	5.265514E-05	1.36	20.5	163.3	Yes	0.39	3.4	61.2	0.13	73.3	4.22	47.3
1140	O0704_SSE	1	2.632757E-05	1.39	19.8	163.3	Yes	1.1	4.6	80	0.4	255.3	6.98	66.8
384	O0705_SSE	16	4.212411E-04	3.39	7.48	163.6	Yes	1.43	12.6	132.8	0.31	311.8	11.14	158
380	O0706_SSE	7	1.842930E-04	4.68	13	163.7	No	NaN	NaN	NaN	0.69	253.1	10.15	153.9
602	O0707_SSE	11	2.896032E-04	1.76	7.81	163.9	Yes	1.16	5.28	241.1	0.39	345.8	7.31	221.7
996	O0708_SSE	1	2.632757E-05	3.89	14.8	164.2	No	NaN	NaN	NaN	0.18	73.9	5.97	145.4
1028	O0709_SSE	3	7.898270E-05	1.81	8.43	164.2	Yes	0.6	3.7	356.6	0.15	15.9	5.61	358.2
25	O0710_SSE	30	7.898270E-04	2.26	12.12	164.3	Yes	0.9	4.49	233.2	0.28	108.6	6.23	202.2
1098	O0711_SSE	1	2.632757E-05	1.42	8.2	164.7	Yes	0.98	6	96.2	0.08	129.8	7.19	87.2
333	O0712_SSE	12	3.159308E-04	1.83	14.26	164.9	Yes	0.13	1.15	268.7	0.3	256	3.53	232.9
953	O0713_SSE	2	5.265514E-05	1.34	12.1	164.9	Yes	0.62	4.75	77.5	0.53	175.5	5.65	78.3
1153	O0714_SSE	1	2.632757E-05	1.51	11.4	164.9	Yes	0.9	5	110.2	0.17	202.8	6.41	116.6
112	O0715_SSE	109	2.869705E-03	2.11	12.23	165.1	Yes	0.95	4.71	91.8	0.32	257.6	6.33	122.7
171	O0716_SSE	43	1.132085E-03	2.2	13.27	165.1	Yes	1.13	4.56	22.5	0.36	213	7.46	9.3
355	O0717_SSE	8	2.106205E-04	2.3	11.59	165.3	Yes	0.76	4.43	227.7	0.18	32.5	5.81	193.6
693	O0718_SSE	3	7.898270E-05	1.55	18.57	165.4	Yes	1.02	4.55	81.2	0.45	264.4	5.9	96.5
809	O0719_SSE	1	2.632757E-05	2.19	9.5	165.4	Yes	1.7	6	96.1	0.9	264.5	8.49	83.5
180	O0720_SSE	50	1.316378E-03	2.26	12.13	165.5	Yes	1.37	5.22	53.7	0.32	280.5	7.89	47.4
104	O0721_SSE	160	4.212411E-03	1.79	8.12	165.7	Yes	0.94	5.01	94	0.33	339.8	6.47	131.4
929	O0722_SSE	1	2.632757E-05	1.26	10.4	166	Yes	0.28	2.9	332.3	0.4	325.9	3.52	327.2
973	O0723_SSE	1	2.632757E-05	1.36	11.9	166	No	NaN	NaN	NaN	0.26	323	2.67	205.9
389	O0724_SSE	31	8.161546E-04	2.33	12.83	166.2	Yes	1.16	4.76	45.1	0.31	208.3	7.41	34.1
34	O0725_SSE	179	4.712635E-03	2.4	12.89	166.4	Yes	1.05	4.76	71.1	0.3	322.6	6.67	77.1
121	O0726_SSE	9	2.369481E-04	1.06	6.88	166.4	Yes	0.28	2.33	221.2	0.23	241.9	3.49	162.8
167	O0727_SSE	96	2.527446E-03	2.03	6.33	167.4	Yes	1.16	8.4	92.1	0.41	275.2	9.08	160.3
20	O0728_SSE	102	2.685412E-03	2.58	12.73	167.6	Yes	1.66	5.71	75.2	0.38	215.8	8.38	75.6
1046	O0729_SSE	2	5.265514E-05	1.43	8.1	167.7	No	NaN	NaN	NaN	0.11	147.8	5	203.8
12	O0730_SSE	244	6.423926E-03	1.99	11.54	168	Yes	0.84	4.33	104.4	0.32	272.5	5.85	120.5
23	O0731_SSE	385	1.013611E-02	1.64	9.45	168.1	Yes	0.9	4.76	84	0.35	223.3	6.51	81.9
462	O0732_SSE	8	2.106205E-04	2.19	6.24	168.1	No	NaN	NaN	NaN	0.15	101.3	8.67	163.9
1121	O0733_SSE	1	2.632757E-05	2.72	13.9	168.5	Yes	0.89	5	119.8	0.23	36.4	6.4	105.8
623	O0734_SSE	3	7.898270E-05	1.6	14.6	168.7	Yes	0.55	4.13	78.7	0.48	311.9	5.24	78
153	O0735_S	61	1.605982E-03	2.02	14.11	168.8	Yes	1.03	4.59	39.3	0.38	190.9	6.7	32.2
844	O0736_S	1	2.632757E-05	1.74	18.5	168.8	Yes	0.54	3.6	29.2	0.53	128.6	4.57	23.1
162	O0737_S	11	2.896032E-04	1.84	13.35	169.2	Yes	0.39	3.51	255.1	0.32	210.2	4.19	233.1
553	O0738_S	9	2.369481E-04	1.51	15.79	169.2	Yes	1.02	4.56	68.1	0.47	220.5	6.96	61.3
591	O0739_S	6	1.579654E-04	2.71	12.65	169.4	No	0	0.1	230.4	0.24	87.5	5.53	173.2
400	O0740_S	12	3.159308E-04	2.39	8.93	169.5	Yes	1.67	6.37	110.1	0.44	258.9	8.31	110.7
149	O0741_S	6	1.579654E-04	1.63	12.62	169.6	Yes	0.22	2.23	288.5	0.36	339.1	3.36	275
883	O0742_S	4	1.053103E-04	2.05	10.82	169.8	Yes	1.47	5.2	59.7	0.11	70.2	8.46	48.9
723	O0743_S	8	2.106205E-04	3.18	10.71	170.4	No	NaN	NaN	NaN	0.25	251.9	8.91	170.1
607	O0744_S	1	2.632757E-05	1.37	19.6	170.7	Yes	0.51	3.8	50.7	0.09	148	5.01	39.8
701	O0745_S	3	7.898270E-05	1.08	6.57	170.7	Yes	0.79	5.95	342.4	0.17	344.3	6.17	210.7
649	O0746_S	4	1.053103E-04	1.75	13.75	171.1	Yes	0.84	4.17	35.1	0.25	179.4	6.13	27.6
291	O0747_S	9	2.369481E-04	1.91	7.37	171.2	Yes	0.64	3.77	241.3	0.22	107.7	6.22	189.7



TECHNICAL REPORT

No.: **I-RL-3A00.00-1000-941-PPC-001 rev.A**

Project: **SANTOS BASIN NORTHERN PRE-SALT FIELDS**

Sheet: **80 of 89**

Title: **DURATION OF EXTREME CURRENT PROFILES AND CLUSTERS OF SIMULTANEOUS METEOCEAN CONDITIONS**

Cluster	Name	Occurrence		Wave (Peak 1)			Wave (Peak 2)			Current		Wind		
		N	%	Hs	Tp	Dir	Is there?	Hs	Tp	Dir	Speed	Dir	Speed	Dir
845	O0748_S	2	5.265514E-05	3.83	15.1	171.3	Yes	0.89	4.5	115	0.27	61.9	6.24	126.6
249	O0749_S	29	7.634995E-04	2.65	6.6	171.4	Yes	1.74	10.6	215	0.49	271.5	10.22	160
478	O0750_S	19	5.002238E-04	2.15	12.09	171.4	Yes	1.28	5.21	38.2	0.34	159.7	7.78	28
30	O0751_S	156	4.107101E-03	2.49	10.59	171.8	Yes	1.38	5.71	107.3	0.29	345.1	7.41	150.1
605	O0752_S	11	2.896032E-04	1.42	11.79	171.9	Yes	0.66	4.03	43.1	0.25	234.6	5.55	34.2
560	O0753_S	1	2.632757E-05	2.78	6.2	172.1	No	NaN	NaN	NaN	0.22	162	9.88	157.5
394	O0754_S	15	3.949135E-04	1.7	10.94	172.3	Yes	1.15	4.98	64.5	0.28	334.6	7.3	75.9
975	O0755_S	1	2.632757E-05	3.85	16.5	172.4	No	NaN	NaN	NaN	0.6	286.6	10.83	166.9
185	O0756_S	152	4.001790E-03	1.67	10.62	172.7	Yes	0.94	4.77	75.8	0.36	237.6	6.61	66.5
449	O0757_S	9	2.369481E-04	1.6	13.98	172.7	Yes	0.79	4.68	85.1	0.34	287.9	5.73	98.9
774	O0758_S	4	1.053103E-04	2.27	9.13	172.7	Yes	1.26	5.45	233.1	0.26	41.6	7.17	216.9
202	O0759_S	68	1.790275E-03	1.69	7.34	173	Yes	0.93	5.8	116.9	0.42	232.7	6.65	150
1178	O0760_S	1	2.632757E-05	1.17	12.8	173	Yes	0.58	4	101.5	0.34	129	5.23	101.2
163	O0761_S	23	6.055341E-04	1.41	5.34	173.1	Yes	1.03	8.31	86	0.43	319.7	8.12	172.4
720	O0762_S	7	1.842930E-04	2.61	11.71	173.2	Yes	1.92	6.7	221.3	0.3	254.9	7.2	188.5
665	O0763_S	3	7.898270E-05	2.14	11.27	173.4	No	NaN	NaN	NaN	0.13	132.1	4.91	210.6
950	O0764_S	1	2.632757E-05	3.65	15.1	173.4	No	NaN	NaN	NaN	0.23	253.1	7.64	186.9
444	O0765_S	15	3.949135E-04	1.63	11.19	173.5	Yes	0.62	4.03	40.3	0.28	179.9	5.44	33.4
1167	O0766_S	1	2.632757E-05	2.14	9.5	174	Yes	0.72	4.4	233.5	0.17	170.4	5.66	234.3
650	O0767_S	3	7.898270E-05	1.85	13.7	174.1	Yes	0.56	3.87	46.5	0.3	334.4	5.15	40.7
458	O0768_S	3	7.898270E-05	2.2	9.5	174.3	Yes	1.28	5.3	83.7	0.21	167.8	7.42	67
340	O0769_S	9	2.369481E-04	3.09	11.03	174.4	Yes	1.51	5.57	118.3	0.26	17.6	8.88	144.2
706	O0770_S	5	1.316378E-04	1.41	9.66	175.9	Yes	0.4	3.05	99.7	0.14	15.3	4.27	87.2
26	O0771_S	37	9.741200E-04	1.68	9.66	176.1	Yes	0.28	2.83	250.4	0.37	250.7	4.42	202.8
427	O0772_S	10	2.632757E-04	3.58	14.41	176.1	Yes	1.38	6.3	124.8	0.23	4.7	7.68	166.6
7	O0773_S	155	4.080773E-03	1.76	10.51	176.2	Yes	0.83	4.47	67.1	0.25	115.1	6.17	63.8
192	O0774_S	168	4.423031E-03	1.96	11.23	176.2	Yes	1.2	5.09	68.8	0.31	199.1	7.5	63.1
35	O0775_S	124	3.264618E-03	2.79	13.74	176.4	Yes	1.54	5.48	69.9	0.34	238.7	8.11	73.8
533	O0776_S	12	3.159308E-04	2.29	10.72	176.9	Yes	0.14	1.55	265.8	0.28	317.9	6.43	190.4
711	O0777_S	2	5.265514E-05	1.44	18.9	177	Yes	0.7	4.2	48.5	0.39	156.6	5.72	41.5
63	O0778_S	102	2.685412E-03	2.44	7.14	177.2	Yes	1.14	8.27	84	0.41	279.6	9.91	169.4
995	O0779_S	3	7.898270E-05	3.11	7.07	177.2	Yes	1.71	21.1	97.6	0.37	319.2	11.16	172
455	O0780_S	12	3.159308E-04	3.45	15.2	177.4	Yes	1.4	5.19	78.4	0.24	270.7	7.09	91.4
1100	O0781_S	1	2.632757E-05	2.02	18.4	177.4	Yes	0.31	3	103.6	0.14	347.8	3.9	68.7
311	O0782_S	12	3.159308E-04	2.9	14.08	177.5	Yes	1.34	5.97	62.1	0.15	110.1	7.96	63.2
633	O0783_S	8	2.106205E-04	1.69	16.55	177.9	Yes	1.08	4.81	74.1	0.36	212.7	7.05	69.7
727	O0784_S	2	5.265514E-05	1.98	15.25	178.1	Yes	0.6	3.65	35.2	0.22	328.6	5.4	30.1
122	O0785_S	50	1.316378E-03	1.73	8.84	178.2	Yes	0.53	3.35	238.5	0.25	27.7	5.3	224.5
412	O0786_S	7	1.842930E-04	1.21	7.79	178.2	Yes	0.53	3.66	76.1	0.7	274.4	4.96	84.4
452	O0787_S	6	1.579654E-04	1.35	4.85	178.2	Yes	1.11	8.52	89.5	0.56	232	8.29	169.5
1002	O0788_S	1	2.632757E-05	3.17	11.3	178.2	No	NaN	NaN	NaN	0.25	237.5	7.65	182
137	O0789_S	81	2.132533E-03	1.83	5.67	178.6	Yes	1.27	8.43	84.6	0.4	289	9.06	171.6
283	O0790_S	63	1.658637E-03	2.05	10.76	178.9	Yes	1.38	5.36	80.7	0.34	239.1	8.11	73
498	O0791_S	9	2.369481E-04	1.86	8.07	179.1	Yes	0.61	3.8	222.6	0.29	139.8	5.22	203.7
312	O0792_S	21	5.528789E-04	2.66	8.3	179.4	Yes	1.1	6.25	88.3	0.22	3.4	9.11	176.5
15	O0793_S	196	5.160203E-03	2.21	8.79	179.5	Yes	1.22	5.68	172.9	0.39	274.2	7.17	165.2
413	O0794_S	6	1.579654E-04	1.49	9.08	179.5	Yes	0.85	4.92	75	0.16	39	6.61	64
399	O0795_S	10	2.632757E-04	2.1	12.57	179.7	Yes	0.61	3.94	269.5	0.28	195.6	5.38	266.2
165	O0796_S	113	2.975015E-03	2.22	9.59	179.8	Yes	1.16	5.41	104	0.33	289.9	7.16	143.1
480	O0797_S	21	5.528789E-04	1.47	10.21	179.9	Yes	0.82	4.69	75	0.26	334.6	5.9	83.3



TECHNICAL REPORT

No.: **I-RL-3A00.00-1000-941-PPC-001 rev.A**

Project: **SANTOS BASIN NORTHERN PRE-SALT FIELDS**

Sheet: **81 of 89**

Title: **DURATION OF EXTREME CURRENT PROFILES AND CLUSTERS OF SIMULTANEOUS METEOCEAN CONDITIONS**

Cluster	Name	Occurrence		Wave (Peak 1)			Wave (Peak 2)			Current		Wind		
		N	%	Hs	Tp	Dir	Is there?	Hs	Tp	Dir	Speed	Dir	Speed	Dir
639	O0798_S	2	5.265514E-05	1.36	10.6	179.9	No	NaN	NaN	NaN	0.24	14.4	3.38	182.7
1169	O0799_S	1	2.632757E-05	4.65	12.3	180.2	No	NaN	NaN	NaN	0.84	279.4	11.19	135.6
201	O0800_S	40	1.053103E-03	3.4	8.19	180.3	Yes	1.49	9.82	154.2	0.37	296.5	11.99	175
481	O0801_S	4	1.053103E-04	2.05	17.43	180.3	Yes	0.35	2.47	264.1	0.25	249.3	4.36	253.7
621	O0802_S	3	7.898270E-05	1.87	10.5	180.3	Yes	0.31	3.1	269.7	0.21	40.4	5.03	266.4
442	O0803_S	4	1.053103E-04	1.88	9.4	180.4	Yes	0.97	4.95	158.1	0.19	132.2	5.71	125.7
1005	O0804_S	1	2.632757E-05	3.14	8.3	180.4	No	NaN	NaN	NaN	0.38	256.3	10.79	185.2
175	O0805_S	8	2.106205E-04	1.47	7.6	180.6	Yes	0.53	3.44	312.5	0.37	288.4	5.14	305.7
532	O0806_S	5	1.316378E-04	1.27	8.7	180.6	Yes	0.81	5.9	108.5	0.56	299.3	5.5	141.1
1020	O0807_S	1	2.632757E-05	4.37	14.3	180.6	No	NaN	NaN	NaN	0.2	12.5	6.87	163.6
981	O0808_S	1	2.632757E-05	2.83	13.8	180.8	Yes	1.72	5.6	26.7	0.12	47.1	8.96	14.3
781	O0809_S	8	2.106205E-04	2.02	15.89	180.9	Yes	1.08	4.69	88	0.38	204.8	6.47	87
824	O0810_S	1	2.632757E-05	1.88	14.8	181.1	No	NaN	NaN	NaN	0.18	112.3	9.3	159.4
1079	O0811_S	1	2.632757E-05	1.73	9.5	181.2	Yes	0.47	3.6	33.1	0.01	135	4.49	33.7
980	O0812_S	2	5.265514E-05	2.18	17.7	181.4	Yes	1.05	4.7	67.4	0.18	358.1	6.58	48.4
309	O0813_S	17	4.475686E-04	1.61	7.3	181.6	Yes	0.83	4.4	247.3	0.3	336.8	5.84	178.4
318	O0814_S	8	2.106205E-04	2.81	15.44	181.6	Yes	1.78	5.95	50.1	0.14	82	8.37	45.8
804	O0815_S	2	5.265514E-05	4.41	16.8	181.7	Yes	3.13	7.65	233.3	0.52	100.9	11.72	247.6
853	O0816_S	3	7.898270E-05	2.23	11.6	181.8	Yes	0.85	4.4	248.1	0.46	198.8	6.97	252.8
166	O0817_S	21	5.528789E-04	2.09	12.93	182	Yes	0.61	3.71	348.8	0.28	21.8	5.26	337
1065	O0818_S	1	2.632757E-05	4.75	16.9	182	Yes	3.68	8.1	236.4	0.66	91.8	13.03	250.8
1061	O0819_S	1	2.632757E-05	1.88	5.7	182.4	Yes	1.15	13.5	87.7	0.28	32.3	9.99	176.5
847	O0820_S	3	7.898270E-05	3.72	15.53	182.8	Yes	2.71	7.3	228.1	0.34	70	10.26	238.4
923	O0821_S	2	5.265514E-05	1.36	15.3	183	Yes	0.7	4.8	83.8	0.34	249.4	5.91	78.3
967	O0822_S	1	2.632757E-05	3.71	16.5	183	Yes	2.99	7.3	81.4	0.19	269.4	10.58	73.6
306	O0823_S	102	2.685412E-03	1.77	7.99	183.1	Yes	0.85	4.95	145.7	0.4	247.4	6.43	163.8
488	O0824_S	4	1.053103E-04	1.98	15.15	183.3	Yes	1.16	4.97	51.8	0.13	118.9	7.7	40
393	O0825_S	11	2.896032E-04	1.61	8.83	183.8	Yes	0.95	5.44	82.3	0.27	87.1	5.71	87.7
359	O0826_S	3	7.898270E-05	3.45	10.83	184.1	Yes	1.66	6	146.7	0.14	46.4	9.48	172.3
1152	O0827_S	1	2.632757E-05	2.65	11.2	184.2	No	NaN	NaN	NaN	0.05	203.1	5.29	160.3
1049	O0828_S	1	2.632757E-05	2.34	16.6	184.3	Yes	0.67	3.4	59.4	0.28	133	5.05	64.4
758	O0829_S	4	1.053103E-04	1.8	16.88	184.5	Yes	0.68	3.67	114.3	0.33	260.2	5.25	118.5
170	O0830_S	26	6.845168E-04	2.17	14.96	184.6	Yes	0.93	4.28	71.6	0.39	242.8	6.22	75.4
396	O0831_S	15	3.949135E-04	3.05	13.25	184.7	Yes	1.5	5.6	108.5	0.29	70.7	6.46	127.1
550	O0832_S	6	1.579654E-04	3.42	14.72	184.9	Yes	2.1	5.93	29.2	0.26	158.4	9.39	24.2
737	O0833_S	3	7.898270E-05	2.8	15.03	185	Yes	1.09	4.5	19.4	0.18	288.6	6.52	15.1
142	O0834_S	116	3.053998E-03	1.74	10.03	185.1	Yes	1.06	4.97	82.9	0.3	186.9	7.11	84.7
339	O0835_S	18	4.738962E-04	3.3	11.94	185.3	No	NaN	NaN	NaN	0.26	2.6	8.43	187.3
608	O0836_S	1	2.632757E-05	4.9	16.4	185.3	Yes	3.63	8.1	240.1	0.67	83.1	12.29	250.7
636	O0837_S	3	7.898270E-05	1.38	11.63	185.4	Yes	0.62	3.27	71.3	0.28	334.1	4.81	71.1
670	O0838_S	3	7.898270E-05	1.42	11.57	185.6	Yes	0.96	4.67	74.8	0.35	171	6.72	66.4
821	O0839_S	4	1.053103E-04	2.94	16.8	185.6	Yes	0.71	4.6	115.7	0.13	286	6.26	122.5
197	O0840_S	101	2.659084E-03	1.92	10.77	185.7	Yes	0.93	4.89	103.1	0.36	238.3	6.23	135.5
603	O0841_S	2	5.265514E-05	2.44	8.9	185.8	Yes	2.03	6.7	259.5	0.32	11.4	8.77	248.6
1095	O0842_S	1	2.632757E-05	3.7	11.9	185.8	No	NaN	NaN	NaN	0.16	280.1	8.74	157.3
88	O0843_S	72	1.895585E-03	2.04	9.59	186.3	Yes	1.49	8.1	148.8	0.28	10.9	6.27	187.6
1000	O0844_S	1	2.632757E-05	1.56	9.6	186.6	Yes	0.25	2.7	330.4	0.15	139.4	4.18	296.8
105	O0845_S	7	1.842930E-04	2.54	16.23	186.7	Yes	1.19	6.3	233.9	0.34	356.8	7.6	193.5
825	O0846_S	2	5.265514E-05	1.29	7.45	186.9	Yes	0.42	3.15	315.9	0.45	358.2	4.63	329.9
221	O0847_S	35	9.214649E-04	2.56	13.07	187	Yes	1.15	4.83	55.2	0.24	88.7	7.17	45.1



TECHNICAL REPORT

No.: **I-RL-3A00.00-1000-941-PPC-001 rev.A**

Project: **SANTOS BASIN NORTHERN PRE-SALT FIELDS**

Sheet: **82 of 89**

Title: **DURATION OF EXTREME CURRENT PROFILES AND CLUSTERS OF SIMULTANEOUS METEOCEAN CONDITIONS**

Cluster	Name	Occurrence		Wave (Peak 1)			Wave (Peak 2)			Current		Wind		
		N	%	Hs	Tp	Dir	Is there?	Hs	Tp	Dir	Speed	Dir	Speed	Dir
75	O0848_S	126	3.317274E-03	1.76	8.84	187.1	Yes	0.88	5.03	140.3	0.3	251.9	5.97	165.5
183	O0849_S	28	7.371719E-04	2.73	13.89	187.3	Yes	0.58	3.65	301.5	0.3	33.6	5.82	277.5
302	O0850_S	5	1.316378E-04	1.15	4.18	187.3	Yes	1.01	9.1	80.5	0.35	305.2	8.9	185.7
868	O0851_S	3	7.898270E-05	2.49	11.77	187.4	Yes	1.58	4.6	261.6	0.13	259.8	8.53	235.7
966	O0852_S	1	2.632757E-05	3.08	9.9	187.5	No	NaN	NaN	NaN	0.19	284	8.8	216
222	O0853_S	16	4.212411E-04	2.62	6.97	187.6	Yes	0.59	9.25	96.3	0.19	121.8	9.36	176.9
1115	O0854_S	3	7.898270E-05	2.22	12.93	187.6	No	NaN	NaN	NaN	0.19	66.4	6.38	185
961	O0855_S	4	1.053103E-04	2.38	15.92	187.7	Yes	0.93	3.65	80.9	0.39	210	5.7	79.3
136	O0856_S	57	1.500671E-03	2.44	14.15	187.9	Yes	1.13	4.9	103.5	0.33	211	6.53	120.7
464	O0857_S	19	5.002238E-04	2.13	13.46	188	Yes	0.83	4.44	58.4	0.38	189.1	5.97	53.4
316	O0858_S	27	7.108443E-04	1.43	8.69	188.2	Yes	0.63	4.5	47.4	0.38	261.3	5.9	42.5
96	O0859_S	54	1.421689E-03	2.59	9.86	188.3	Yes	1.14	4.98	187.8	0.29	223.3	7.57	186.8
643	O0860_S	2	5.265514E-05	1.72	9	188.3	Yes	1.31	5.8	61	0.19	268.6	8.77	39.9
710	O0861_S	3	7.898270E-05	2.25	15.37	188.3	Yes	0.6	3.67	259.6	0.51	201.3	5.27	268.4
203	O0862_S	96	2.527446E-03	2.82	13.26	188.4	Yes	1.32	5.4	107.6	0.32	287.9	7.17	131.5
98	O0863_S	108	2.843377E-03	3.13	14.4	188.5	Yes	1.6	5.78	89.3	0.38	252.2	8.35	97.3
1059	O0864_S	4	1.053103E-04	3.69	14.38	188.5	No	NaN	NaN	NaN	0.17	223.9	7.69	204.4
1162	O0865_S	1	2.632757E-05	2.01	8.9	188.5	Yes	0.25	2.8	259.5	0.13	146.2	3.76	282.9
854	O0866_S	1	2.632757E-05	4.92	15.8	188.6	Yes	3.33	7.5	243.7	0.63	72.6	11.56	250.4
344	O0867_S	6	1.579654E-04	3.06	17.2	188.7	Yes	1.31	4.9	75.9	0.3	340.4	7.28	67.9
615	O0868_S	7	1.842930E-04	1.67	12.94	188.7	Yes	0.81	5.15	80.6	0.42	229	6.39	91.3
495	O0869_S	6	1.579654E-04	1.76	10.52	188.8	Yes	0.71	3.36	290.8	0.35	172.6	5.82	298.9
347	O0870_S	30	7.898270E-04	2.55	8.02	188.9	Yes	1.3	8.46	109.3	0.38	266.3	9.84	176.9
1009	O0871_S	1	2.632757E-05	4.17	14.7	188.9	Yes	3.82	8.4	234.8	0.24	83	12.48	240.2
93	O0872_S	18	4.738962E-04	2.23	14.47	189	Yes	1.04	4.71	63.6	0.28	345.4	6.77	55
970	O0873_S	1	2.632757E-05	1.53	4.6	189	Yes	1.31	14.1	53.6	0.29	65.1	11.1	182.7
990	O0874_S	1	2.632757E-05	4.91	14	189.4	No	NaN	NaN	NaN	0.33	126.1	11.48	234.8
247	O0875_S	55	1.448016E-03	1.6	9.43	189.5	Yes	0.62	4.21	89.7	0.25	325.3	5.63	91.3
514	O0876_S	4	1.053103E-04	2.22	16.93	189.5	Yes	0.73	4.3	245.2	0.13	295.7	5.47	205
600	O0877_S	7	1.842930E-04	2.1	13.26	189.8	Yes	0.6	4.4	95	0.29	318.3	5.77	91.1
140	O0878_S	66	1.737619E-03	2.69	14.11	189.9	Yes	1.32	5.07	70.2	0.34	283.3	7.53	78.6
83	O0879_S	342	9.004028E-03	2.09	11.82	190	Yes	1.09	4.96	89.6	0.38	233.3	6.91	94.9
753	O0880_S	1	2.632757E-05	4.35	10.6	190.4	Yes	0.73	9.3	78.7	0.6	275.6	14.71	199.2
18	O0881_S	270	7.108443E-03	2.28	12.26	190.5	Yes	1.25	5.17	80.8	0.34	186.6	7.55	78.2
176	O0882_S	76	2.000895E-03	2.14	11.54	190.6	Yes	1.12	5.02	84.3	0.34	318.6	7.45	72.6
683	O0883_S	4	1.053103E-04	2.31	6.32	190.6	Yes	1.09	9.33	78	0.48	341.2	10.97	175.6
408	O0884_S	8	2.106205E-04	2.34	11.5	190.9	Yes	1.56	5.66	80.9	0.33	295	9.11	66.5
28	O0885_S	40	1.053103E-03	2.7	15.39	191	Yes	1.24	4.83	79.1	0.31	247.3	7.35	86.4
210	O0886_SSW	10	2.632757E-04	2.82	14.64	191.3	Yes	0.44	2.67	280.5	0.28	19.4	5.7	228.3
662	O0887_SSW	1	2.632757E-05	2.37	11.7	191.3	Yes	1.81	6.2	48.2	0.46	217.6	8.52	53.5
807	O0888_SSW	3	7.898270E-05	1.67	11.53	191.4	No	0	0.55	100.1	0.32	261.8	4.17	125.8
1101	O0889_SSW	1	2.632757E-05	2.97	18.5	191.4	Yes	0.66	3.3	115.7	0.46	319.8	5.76	100.7
601	O0890_SSW	5	1.316378E-04	2.68	13.12	191.5	Yes	1.57	5.08	357.7	0.31	277.9	9.51	353.5
1103	O0891_SSW	3	7.898270E-05	2.51	12.27	191.5	Yes	0.69	4.33	326.4	0.45	213.1	6	321.4
58	O0892_SSW	206	5.423479E-03	2.28	12.89	191.6	Yes	1.31	5.28	78.3	0.38	214.7	7.73	71.5
368	O0893_SSW	47	1.237396E-03	2.54	11.2	191.7	Yes	0.92	4.67	141.7	0.32	288.6	6.69	169.5
345	O0894_SSW	15	3.949135E-04	1.69	12.39	192	Yes	0.59	3.63	87.5	0.25	273.2	4.89	90.5
519	O0895_SSW	4	1.053103E-04	1.91	6.2	192	Yes	1.4	10.95	111.1	0.18	81.5	8.65	189.1
107	O0896_SSW	45	1.184741E-03	2.38	12.85	192.2	Yes	0.95	4.84	97.7	0.65	242.4	6.35	122.7
485	O0897_SSW	10	2.632757E-04	2.38	13.96	192.2	Yes	1.37	5.64	82.4	0.15	100.2	7.89	73.3



TECHNICAL REPORT

No.: **I-RL-3A00.00-1000-941-PPC-001 rev.A**

Project: **SANTOS BASIN NORTHERN PRE-SALT FIELDS**

Sheet: **83 of 89**

Title: **DURATION OF EXTREME CURRENT PROFILES AND CLUSTERS OF SIMULTANEOUS METEOCEAN CONDITIONS**

Cluster	Name	Occurrence		Wave (Peak 1)			Wave (Peak 2)			Current		Wind		
		N	%	Hs	Tp	Dir	Is there?	Hs	Tp	Dir	Speed	Dir	Speed	Dir
891	O0898_SSW	2	5.265514E-05	1.54	8.15	192.2	Yes	0.28	2.9	4.5	0.31	248.3	4.22	3.8
1150	O0899_SSW	1	2.632757E-05	3.68	10.9	192.3	No	NaN	NaN	NaN	0.12	160.1	9.36	157.1
642	O0900_SSW	9	2.369481E-04	2.12	13.79	192.4	Yes	0.75	3.52	139.9	0.42	294.3	6.06	154.8
103	O0901_SSW	67	1.763947E-03	2.3	11.45	192.5	Yes	0.93	4.71	114.4	0.18	84.5	6.43	142.3
819	O0902_SSW	3	7.898270E-05	4.93	14.43	192.5	No	NaN	NaN	NaN	0.2	347	8.52	180.4
351	O0903_SSW	40	1.053103E-03	1.89	8.24	192.6	Yes	0.97	6.75	118.1	0.26	39.6	7.14	166.8
1014	O0904_SSW	2	5.265514E-05	3.13	7.45	192.7	No	NaN	NaN	NaN	0.48	201.4	10.68	180.2
1086	O0905_SSW	3	7.898270E-05	3.35	14.63	192.8	Yes	0.74	4.5	56.6	0.2	51.4	5.95	44.2
292	O0906_SSW	5	1.316378E-04	2.75	16.02	193.1	Yes	1.86	6.38	99.4	0.12	357.9	9.01	102.8
569	O0907_SSW	8	2.106205E-04	2.38	7.69	193.1	Yes	1.3	8.72	124.7	0.25	353.9	10.2	199.6
1063	O0908_SSW	1	2.632757E-05	2.34	16.1	193.1	No	NaN	NaN	NaN	0.04	268.6	4.5	224.7
371	O0909_SSW	3	7.898270E-05	4.96	15.33	193.4	Yes	3.82	8.75	236	0.41	36.5	11.9	229.1
752	O0910_SSW	5	1.316378E-04	2.28	15.5	193.6	No	NaN	NaN	NaN	0.26	50.8	5.25	192.7
1088	O0911_SSW	1	2.632757E-05	4.85	9.7	193.6	No	NaN	NaN	NaN	0.61	274	14.79	212.5
728	O0912_SSW	1	2.632757E-05	2.48	19.2	193.8	Yes	0.7	5	142.7	0.31	318.5	6.56	116.8
686	O0913_SSW	4	1.053103E-04	1.66	8.15	194	Yes	0.43	3.55	257	0.13	155.9	5.08	255.6
910	O0914_SSW	2	5.265514E-05	3.36	16.5	194	No	NaN	NaN	NaN	0.1	130.7	7.51	216.4
331	O0915_SSW	16	4.212411E-04	2.68	13.16	194.1	Yes	1.14	5.15	141.2	0.18	117.9	6.77	167.6
433	O0916_SSW	21	5.528789E-04	2.3	13.4	194.2	Yes	0.95	4.99	53.6	0.31	281.8	6.93	44.8
896	O0917_SSW	2	5.265514E-05	3.29	13.9	194.2	No	NaN	NaN	NaN	0.23	350.9	9.59	184.6
434	O0918_SSW	11	2.896032E-04	2.95	13.59	194.5	Yes	1.39	5.12	83.7	0.25	130.3	8.16	70.6
794	O0919_SSW	4	1.053103E-04	1.81	15.4	194.5	Yes	0.97	4.28	71.7	0.3	257.3	7.17	76.1
848	O0920_SSW	5	1.316378E-04	4.19	15.98	194.5	Yes	2.66	6.77	96.6	0.21	258	8.88	123.8
943	O0921_SSW	1	2.632757E-05	1.91	14.4	194.5	Yes	1.69	5.7	51	0.17	115	8.61	44.2
369	O0922_SSW	22	5.792065E-04	2.33	10.67	194.6	Yes	1.34	5.32	138.9	0.23	135	6.99	163.5
1030	O0923_SSW	2	5.265514E-05	2.57	13.15	194.6	No	0	0.15	328.8	0.4	191.5	2.21	328.8
128	O0924_SSW	31	8.161546E-04	2.01	11.26	194.7	Yes	0.8	4.53	66.5	0.2	132.4	6.52	55.6
1168	O0925_SSW	1	2.632757E-05	1.82	8.2	194.7	Yes	0.58	3.3	247	0.43	331.5	4.72	233.7
174	O0926_SSW	17	4.475686E-04	2.38	14.32	194.8	Yes	1.17	4.67	50	0.49	234.9	7.14	43.8
687	O0927_SSW	6	1.579654E-04	2.64	8.6	195.1	Yes	1.27	5.05	260.3	0.14	105.7	8.06	230.8
1043	O0928_SSW	1	2.632757E-05	1.56	14.3	195.1	Yes	1.44	5	80.2	0.46	258.2	8.43	81.2
117	O0929_SSW	95	2.501119E-03	2.69	12.77	195.3	Yes	0.82	4.31	167.2	0.3	328.4	6.59	177
151	O0930_SSW	24	6.318616E-04	3.02	10.14	195.3	Yes	1.55	5.23	230.5	0.28	4.4	8.63	195.9
363	O0931_SSW	22	5.792065E-04	4.02	15.52	195.3	Yes	1.12	4.98	109.7	0.2	31.8	6.82	114.3
1188	O0932_SSW	1	2.632757E-05	1.85	10.2	195.3	No	NaN	NaN	NaN	0.13	91.3	4.27	199.3
431	O0933_SSW	8	2.106205E-04	4.08	15.13	195.4	Yes	1.11	4.77	114.8	0.29	289.6	7.46	139.2
205	O0934_SSW	17	4.475686E-04	1.99	10.16	195.5	No	NaN	NaN	NaN	0.28	201.2	5.24	195.9
622	O0935_SSW	1	2.632757E-05	4.18	7.3	195.6	No	NaN	NaN	NaN	0.35	327.1	11.36	188
39	O0936_SSW	227	5.976358E-03	2.02	10.07	195.7	Yes	0.86	4.52	113.8	0.3	292	6.39	122
799	O0937_SSW	4	1.053103E-04	3.26	16.63	195.7	Yes	1.97	6.93	71.9	0.13	316.5	9.06	85.4
1056	O0938_SSW	1	2.632757E-05	5.63	10.1	195.7	No	NaN	NaN	NaN	0.68	256.6	15.54	204.6
520	O0939_SSW	3	7.898270E-05	1.59	7.5	196	Yes	1.25	5.6	111.8	0.71	211	7.65	146.4
983	O0940_SSW	5	1.316378E-04	1.8	7.38	196.3	Yes	1	5.85	163.3	0.27	31.8	6.23	199.3
1066	O0941_SSW	2	5.265514E-05	4.97	8.25	196.5	No	NaN	NaN	NaN	0.48	312.1	11.81	191.1
471	O0942_SSW	28	7.371719E-04	2.13	8.82	196.7	Yes	1.01	7.3	150.9	0.33	27.6	6.53	192.2
1109	O0943_SSW	1	2.632757E-05	2.88	14	196.8	No	0	0.1	271.1	0.46	189.4	2.14	271.1
704	O0944_SSW	3	7.898270E-05	1.66	10.77	196.9	Yes	0.62	3.7	6	0.26	19.1	4.65	12.4
653	O0945_SSW	10	2.632757E-04	2.47	11.87	197	Yes	0.4	3.04	266.5	0.21	323.4	5.68	240.2
321	O0946_SSW	47	1.237396E-03	2.95	11.46	197.1	Yes	1.54	5.65	220	0.27	51.8	8.38	203.2
859	O0947_SSW	2	5.265514E-05	1.98	4.5	197.3	Yes	1.52	5	62.4	0.27	329.7	10.66	187.5



TECHNICAL REPORT

No.: **I-RL-3A00.00-1000-941-PPC-001 rev.A**

Project: **SANTOS BASIN NORTHERN PRE-SALT FIELDS**

Sheet: **84 of 89**

Title: **DURATION OF EXTREME CURRENT PROFILES AND CLUSTERS OF SIMULTANEOUS METEOCEAN CONDITIONS**

Cluster	Name	Occurrence		Wave (Peak 1)			Wave (Peak 2)			Current		Wind		
		N	%	Hs	Tp	Dir	Is there?	Hs	Tp	Dir	Speed	Dir	Speed	Dir
260	O0948_SSW	13	3.422584E-04	2.09	6.13	197.5	Yes	1.26	9.82	74.4	0.35	223.7	9.42	188.8
1148	O0949_SSW	1	2.632757E-05	4.15	15.3	197.5	No	NaN	NaN	NaN	0.07	161.3	8.21	214.5
50	O0950_SSW	48	1.263723E-03	3.63	12.84	197.6	Yes	1.4	5.65	135.1	0.32	8.8	8.16	193
611	O0951_SSW	1	2.632757E-05	4.11	15	197.7	No	NaN	NaN	NaN	0.07	69.5	7.64	217.9
817	O0952_SSW	3	7.898270E-05	3.13	15.1	197.7	Yes	2.78	6.57	25.6	0.17	71.3	12.58	12.8
948	O0953_SSW	2	5.265514E-05	2.26	12.1	197.8	No	NaN	NaN	NaN	0.67	196.9	5.79	219
1137	O0954_SSW	1	2.632757E-05	2.52	17.7	197.8	Yes	0.7	3.4	107.6	0.24	199.4	5.71	110.7
729	O0955_SSW	8	2.106205E-04	3.35	15.71	198.1	Yes	1.23	5.16	69.2	0.24	240.3	7.46	53.2
977	O0956_SSW	4	1.053103E-04	2.87	13.65	198.1	Yes	0.16	1.43	271.3	0.25	185.2	4.3	267.6
419	O0957_SSW	20	5.265514E-04	2.73	12.13	198.2	Yes	1.54	5.52	100.4	0.41	303.5	7.94	125.4
811	O0958_SSW	4	1.053103E-04	2.18	10.68	198.2	Yes	1.02	5.8	82.5	0.1	24	7.16	69.3
1024	O0959_SSW	2	5.265514E-05	3.34	15.25	198.2	Yes	2.09	6.3	80.9	0.28	261.5	10.93	66.9
418	O0960_SSW	2	5.265514E-05	5.6	9.05	198.3	No	NaN	NaN	NaN	0.4	23.2	12.85	191.9
870	O0961_SSW	4	1.053103E-04	3.1	15.27	198.3	Yes	0.52	3.6	301.9	0.21	15.9	6.92	233.2
346	O0962_SSW	4	1.053103E-04	1.31	6.63	198.4	Yes	0.85	8.6	126.6	0.44	190.1	7.88	195
337	O0963_SSW	33	8.688097E-04	3.96	15.85	198.6	Yes	1.5	5.63	106.2	0.31	270.9	8.42	127.4
694	O0964_SSW	4	1.053103E-04	2.86	6.48	198.6	Yes	1.9	8.3	32	0.53	308.4	10.94	181.9
951	O0965_SSW	2	5.265514E-05	4.97	13.95	198.7	No	NaN	NaN	NaN	0.16	269.9	10.51	234.1
1080	O0966_SSW	1	2.632757E-05	2.17	8.6	198.7	Yes	0.84	4.9	93.3	0.05	207.1	6.5	94.6
261	O0967_SSW	4	1.053103E-04	5.4	9.02	198.9	No	NaN	NaN	NaN	0.51	281	13.93	207.8
290	O0968_SSW	25	6.581892E-04	1.39	5.31	199	Yes	1.13	8.45	87.9	0.38	230.2	8.13	195.4
908	O0969_SSW	6	1.579654E-04	2.21	12.25	199	Yes	0.95	5.26	78.8	0.17	359.3	6.85	81.8
57	O0970_SSW	40	1.053103E-03	2.63	9.36	199.3	Yes	1.21	5.94	190.3	0.28	175.4	7.88	197.7
1119	O0971_SSW	2	5.265514E-05	1.71	15.85	199.3	Yes	0.99	6.4	64.2	0.22	129.2	7.51	67.7
1181	O0972_SSW	1	2.632757E-05	3.55	11.2	199.7	No	NaN	NaN	NaN	0.17	46	8.78	193
341	O0973_SSW	20	5.265514E-04	2.23	9.3	199.8	Yes	1.5	7.07	115.4	0.34	246.9	7.43	175.7
1050	O0974_SSW	1	2.632757E-05	3.67	15.2	199.8	Yes	2.39	6.2	37.2	0.21	226.2	11.76	24.7
989	O0975_SSW	2	5.265514E-05	3.34	15.2	200	Yes	0.27	2.2	315.9	0.13	169.3	4.4	301.3
428	O0976_SSW	14	3.685859E-04	2.25	11.89	200.1	Yes	1.48	5.66	61.9	0.45	237.6	8.84	53.1
100	O0977_SSW	144	3.791170E-03	2.06	10.99	200.4	Yes	1.17	5.23	110.4	0.34	238	7.45	98.1
262	O0978_SSW	19	5.002238E-04	3.3	14.53	200.5	Yes	1.94	5.89	126.9	0.27	291	8.66	170.3
1042	O0979_SSW	2	5.265514E-05	3.17	17.15	200.5	No	NaN	NaN	NaN	0.28	318.8	9.59	176.6
592	O0980_SSW	6	1.579654E-04	1.96	11.1	200.6	Yes	0.67	3.53	303.1	0.24	38.3	5.04	300.7
873	O0981_SSW	3	7.898270E-05	2.76	13.9	200.6	No	NaN	NaN	NaN	0.21	65.3	6.31	176.6
310	O0982_SSW	13	3.422584E-04	4.58	15.13	200.8	Yes	1.26	5.22	132.8	0.24	352.6	8.43	157.6
895	O0983_SSW	3	7.898270E-05	5.3	15.37	201	No	NaN	NaN	NaN	0.26	0.6	10.85	203.4
899	O0984_SSW	2	5.265514E-05	1.81	10.8	201.3	Yes	0.66	4.75	38.3	0.23	246.7	6.16	21.8
65	O0985_SSW	35	9.214649E-04	1.85	6.84	201.4	Yes	1.07	8.19	113.3	0.24	20.3	8.39	205.2
250	O0986_SSW	48	1.263723E-03	3.12	13.45	201.4	Yes	1.44	5.51	92.4	0.39	250.2	7.89	108.5
461	O0987_SSW	17	4.475686E-04	3.46	7.58	201.4	Yes	1.14	10.7	86.9	0.44	301.5	10.78	196.2
839	O0988_SSW	3	7.898270E-05	4.74	13.57	201.4	No	NaN	NaN	NaN	0.19	12.2	10.09	213.2
1003	O0989_SSW	2	5.265514E-05	4.2	12.8	201.4	No	NaN	NaN	NaN	0.23	28.6	10.42	182.6
361	O0990_SSW	37	9.741200E-04	3.63	14.15	201.7	Yes	1.35	5.15	106.6	0.23	289.9	7.53	140.5
921	O0991_SSW	5	1.316378E-04	3.8	15.96	201.7	Yes	1.08	4.63	109.3	0.25	74.3	6.88	107.2
338	O0992_SSW	15	3.949135E-04	3.25	12.7	201.9	Yes	1.24	4.83	131.5	0.32	132.4	6.12	177.1
1067	O0993_SSW	1	2.632757E-05	2	14.8	202.1	Yes	1.7	5.6	156.9	0.28	25.6	8.96	151.7
1131	O0994_SSW	1	2.632757E-05	2.99	10.7	202.4	Yes	2.38	6.8	153.3	0.21	260.6	9.73	148.6
141	O0995_SSW	40	1.053103E-03	2	9.57	202.5	Yes	1.08	5.34	122.9	0.29	189.9	6.63	158.7
556	O0996_SSW	5	1.316378E-04	1.48	5.88	202.8	Yes	1	9.67	113.7	0.29	243.8	8.25	200.7
1180	O0997_SSW	1	2.632757E-05	3.33	15.5	203	Yes	2.04	6.3	48.4	0.04	90	12.47	14.7



TECHNICAL REPORT

No.: **I-RL-3A00.00-1000-941-PPC-001 rev.A**

Project: **SANTOS BASIN NORTHERN PRE-SALT FIELDS**

Sheet: **85 of 89**

Title: **DURATION OF EXTREME CURRENT PROFILES AND CLUSTERS OF SIMULTANEOUS METEOCEAN CONDITIONS**

Cluster	Name	Occurrence		Wave (Peak 1)			Wave (Peak 2)			Current		Wind		
		N	%	Hs	Tp	Dir	Is there?	Hs	Tp	Dir	Speed	Dir	Speed	Dir
9	O0998_SSW	97	2.553774E-03	1.68	6.13	203.1	Yes	1.18	8.42	84.9	0.34	321.8	9.03	198.8
589	O0999_SSW	3	7.898270E-05	3.76	16.57	203.2	Yes	1.86	5.6	161.2	0.39	297.2	7.89	202.2
793	O1000_SSW	2	5.265514E-05	2.68	16.75	203.2	Yes	0.68	3.8	132.3	0.26	250	3.95	148.8
282	O1001_SSW	8	2.106205E-04	5.56	9.74	203.4	Yes	3	12.2	157.4	0.51	258.2	14.09	208.7
336	O1002_SSW	19	5.002238E-04	3.46	13.94	203.4	Yes	0.82	3.51	162.8	0.23	109.8	6.27	188.3
768	O1003_SSW	4	1.053103E-04	3.85	16.7	203.6	Yes	0.81	4.1	122.1	0.27	278.9	7.39	140.3
308	O1004_SSW	20	5.265514E-04	4.07	13.35	203.9	No	NaN	NaN	NaN	0.38	14.1	8.73	215.5
305	O1005_SSW	50	1.316378E-03	2.54	10.75	204.1	Yes	1.35	5.12	145.4	0.31	263	7.08	169.6
577	O1006_SSW	7	1.842930E-04	4.95	12.87	204.2	No	NaN	NaN	NaN	0.33	248.4	10.98	194.2
964	O1007_SSW	1	2.632757E-05	3.47	13.4	204.3	No	NaN	NaN	NaN	0.35	22.6	8.41	227.1
1097	O1008_SSW	1	2.632757E-05	2.93	12.3	204.3	No	NaN	NaN	NaN	0.29	85.5	7.54	246.1
1026	O1009_SSW	1	2.632757E-05	3.29	10.7	204.4	No	NaN	NaN	NaN	0.34	3.8	8.82	188
555	O1010_SSW	4	1.053103E-04	3.64	9.4	204.8	Yes	1.65	11.3	115.3	0.39	273.5	12.35	205.1
832	O1011_SSW	3	7.898270E-05	5.48	14.4	205.1	No	NaN	NaN	NaN	0.2	136.7	10.25	218.5
924	O1012_SSW	4	1.053103E-04	3.28	12.1	205.1	No	0	1	265.6	0.22	24.1	6.57	250.7
1071	O1013_SSW	1	2.632757E-05	4.3	14.5	205.2	No	NaN	NaN	NaN	0.25	224	5.61	163.3
484	O1014_SSW	8	2.106205E-04	3.15	10.93	205.4	No	NaN	NaN	NaN	0.24	168.1	8.78	209.8
582	O1015_SSW	7	1.842930E-04	4.23	14.4	205.4	No	NaN	NaN	NaN	0.19	351.7	8.02	205
27	O1016_SSW	68	1.790275E-03	2.03	6.77	205.7	Yes	1.24	8.34	97.9	0.42	268.1	9.17	200.4
382	O1017_SSW	49	1.290051E-03	2.94	11.63	205.7	Yes	1.52	5.71	143.2	0.34	297	8.34	156.2
453	O1018_SSW	7	1.842930E-04	2.45	11.79	205.7	Yes	0.48	3.37	315.2	0.29	203.1	4.13	263.1
840	O1019_SSW	3	7.898270E-05	4.97	10.1	205.7	Yes	0.79	9.7	85.6	0.47	333.6	15.08	204
134	O1020_SSW	85	2.237843E-03	2.74	10.76	205.8	Yes	0.97	7.23	285.6	0.28	15.7	7.3	204.9
785	O1021_SSW	2	5.265514E-05	4.88	15.4	205.9	No	NaN	NaN	NaN	0.19	276.9	5.76	213.3
1179	O1022_SSW	1	2.632757E-05	3.72	11.4	206	No	NaN	NaN	NaN	0.47	276.7	9.02	175
263	O1023_SSW	29	7.634995E-04	3.07	12.51	206.2	Yes	1.73	6.08	105.9	0.44	270.3	7.72	165.2
974	O1024_SSW	2	5.265514E-05	4.37	9.05	206.3	Yes	0.76	8.8	82.7	0.53	279.9	14.02	203.9
1144	O1025_SSW	1	2.632757E-05	3.01	17	206.3	Yes	0.69	3.7	107.7	0.25	185.1	5.16	100.9
708	O1026_SSW	3	7.898270E-05	3	7	206.6	Yes	1.5	10.45	130.4	0.24	141.4	11.55	198.8
499	O1027_SSW	11	2.896032E-04	2.24	8.89	207.4	Yes	1.34	7.5	86.1	0.26	355.5	7.55	193.2
486	O1028_SSW	10	2.632757E-04	4.92	14.34	207.7	No	NaN	NaN	NaN	0.21	281	8.87	202
1175	O1029_SSW	1	2.632757E-05	1.43	3.7	207.7	Yes	1.23	7.2	27.7	0.53	279.8	11.9	181.4
846	O1030_SSW	2	5.265514E-05	3.4	14.4	207.9	No	NaN	NaN	NaN	0.17	107.8	6.31	169.1
506	O1031_SSW	10	2.632757E-04	4.21	13.88	208.2	No	NaN	NaN	NaN	0.25	346.2	8.29	197.4
668	O1032_SSW	1	2.632757E-05	4.96	9.1	208.2	Yes	3.08	11.9	157.4	0.64	250.3	16.42	225.7
327	O1033_SSW	12	3.159308E-04	2.73	9.72	208.3	Yes	1.6	7.15	344.7	0.23	31.6	8.7	216.2
669	O1034_SSW	5	1.316378E-04	3.18	11.36	208.3	No	NaN	NaN	NaN	0.23	41.6	9.12	220.9
962	O1035_SSW	1	2.632757E-05	3.29	16.3	208.3	Yes	0.66	3.8	104.9	0.23	175.8	5.23	101.1
716	O1036_SSW	2	5.265514E-05	1.87	10.45	208.6	Yes	1.46	12.8	66.6	0.46	347.6	7.18	198.1
411	O1037_SSW	5	1.316378E-04	2.54	10.06	209	Yes	1.08	4.6	156.8	0.23	145.1	6.95	195
764	O1038_SSW	3	7.898270E-05	2.75	11.73	209	No	NaN	NaN	NaN	0.22	193.6	5.25	191.9
566	O1039_SSW	9	2.369481E-04	4.22	13.86	209.2	No	NaN	NaN	NaN	0.24	183.8	7.64	215.8
77	O1040_SSW	69	1.816602E-03	3.35	8.77	209.4	Yes	1.2	9.59	88.7	0.37	326.8	11.58	207.2
186	O1041_SSW	36	9.477924E-04	2.53	9.01	209.4	Yes	1.4	7.43	137.6	0.43	286.6	8.8	183.9
276	O1042_SSW	36	9.477924E-04	3.44	11.87	209.8	Yes	1.79	6.53	138.6	0.45	252.4	8.74	190.2
918	O1043_SSW	1	2.632757E-05	3.31	9.9	210	No	NaN	NaN	NaN	0.13	86.2	8.49	221.5
460	O1044_SSW	6	1.579654E-04	2.86	10.57	210.2	No	NaN	NaN	NaN	0.25	176.6	8.52	195.6
456	O1045_SSW	7	1.842930E-04	3.38	10.83	210.3	Yes	2.38	7	161.5	0.27	4	9.4	198.4
841	O1046_SSW	4	1.053103E-04	6.14	14.88	210.5	No	NaN	NaN	NaN	0.35	353.7	11.49	207.5
1127	O1047_SSW	2	5.265514E-05	2.79	13.15	210.6	No	NaN	NaN	NaN	0.4	0.6	6.72	223.6



TECHNICAL REPORT

No.: **I-RL-3A00.00-1000-941-PPC-001 rev.A**

Project: **SANTOS BASIN NORTHERN PRE-SALT FIELDS**

Sheet: **86 of 89**

Title: **DURATION OF EXTREME CURRENT PROFILES AND CLUSTERS OF SIMULTANEOUS METEOCEAN CONDITIONS**

Cluster	Name	Occurrence		Wave (Peak 1)			Wave (Peak 2)			Current		Wind		
		N	%	Hs	Tp	Dir	Is there?	Hs	Tp	Dir	Speed	Dir	Speed	Dir
330	O1048_SSW	17	4.475686E-04	2.12	7.43	210.7	Yes	1.29	8.25	121.2	0.31	277.1	9.41	202.7
370	O1049_SSW	14	3.685859E-04	3.62	11.9	210.8	Yes	1.6	5.6	133.3	0.28	96.6	8.35	190.5
872	O1050_SSW	5	1.316378E-04	3.26	10.62	210.9	No	NaN	NaN	NaN	0.24	290.9	8.7	209.7
220	O1051_SSW	42	1.105758E-03	2.76	10.03	211.2	Yes	0.36	15.4	89	0.29	295.5	8.01	198.1
385	O1052_SSW	16	4.212411E-04	1.35	5.13	211.2	Yes	1.04	7.69	78	0.36	321.3	8.86	204
1129	O1053_SSW	2	5.265514E-05	3.12	11.85	211.2	Yes	1.63	6	155.2	0.4	82.3	7.94	185.5
1149	O1054_SSW	1	2.632757E-05	2.19	11.7	211.3	Yes	1.79	5.5	75	0.3	105.2	10.24	65.3
388	O1055_SSW	20	5.265514E-04	3.29	11.45	211.4	Yes	2.15	6.77	177.6	0.3	191	8	193.2
323	O1056_SSW	5	1.316378E-04	5.96	9.96	211.5	No	NaN	NaN	NaN	0.31	23.8	13.61	209.9
324	O1057_SSW	28	7.371719E-04	3.82	8.23	211.5	Yes	1.16	10.68	83.2	0.35	342.8	11.84	208.2
450	O1058_SSW	7	1.842930E-04	5.61	15.24	211.5	No	NaN	NaN	NaN	0.2	141.7	9.28	208.7
618	O1059_SSW	6	1.579654E-04	1.85	7.48	211.5	Yes	0.87	6.74	113.5	0.51	317.5	8.03	155.6
926	O1060_SSW	1	2.632757E-05	2.23	5.1	211.7	Yes	1.78	5.6	99.8	0.39	120.8	12.88	202.1
766	O1061_SSW	5	1.316378E-04	4.17	9.12	211.8	Yes	0.97	9.7	151.2	0.24	10	13.42	213.6
1062	O1062_SSW	1	2.632757E-05	5.48	13.8	211.8	No	NaN	NaN	NaN	0.29	212.8	10.08	214.2
470	O1063_SSW	5	1.316378E-04	5.34	10.92	212.1	No	NaN	NaN	NaN	0.44	9.7	15.03	213.4
862	O1064_SSW	10	2.632757E-04	3.6	12.85	212.2	No	NaN	NaN	NaN	0.26	348.3	5.61	237.1
1027	O1065_SSW	1	2.632757E-05	5.42	11.1	212.8	No	NaN	NaN	NaN	0.03	268.1	14.46	212.9
365	O1066_SSW	8	2.106205E-04	5.67	14.1	213.3	No	NaN	NaN	NaN	0.39	351.2	11.65	221.1
960	O1067_SSW	1	2.632757E-05	2.06	8.9	213.3	Yes	0.54	3.4	265.7	0.19	148.4	4.82	278.6
135	O1068_SSW	93	2.448464E-03	2.72	7.64	213.6	Yes	1.35	9.73	96.2	0.37	350.2	10.74	210.6
917	O1069_SW	1	2.632757E-05	3.94	17.2	213.8	No	NaN	NaN	NaN	0.45	306.4	9.9	170.4
459	O1070_SW	6	1.579654E-04	5.08	13.45	214.2	No	NaN	NaN	NaN	0.42	7	9.94	227.6
887	O1071_SW	2	5.265514E-05	4.53	12.25	214.2	No	NaN	NaN	NaN	0.56	10.4	9.73	225.2
1172	O1072_SW	1	2.632757E-05	4.34	13.4	214.2	No	NaN	NaN	NaN	0.32	148.5	8.82	240.8
1001	O1073_SW	2	5.265514E-05	1.05	4.4	214.3	Yes	0.84	6.8	355.2	0.28	11.7	8.73	208.6
503	O1074_SW	7	1.842930E-04	3.95	11.7	215	No	NaN	NaN	NaN	0.5	344.6	9.53	207.7
692	O1075_SW	1	2.632757E-05	1.76	5.6	215	Yes	1.72	8.2	46.4	0.17	66.1	11.57	208.3
522	O1076_SW	3	7.898270E-05	3.57	9.93	215.3	Yes	2.1	6.6	261.4	0.31	146.7	9.16	266.2
270	O1077_SW	9	2.369481E-04	4.93	14.21	215.4	No	NaN	NaN	NaN	0.23	99.2	9.59	220.4
1055	O1078_SW	1	2.632757E-05	2.02	9.6	215.7	Yes	0.34	3.1	266	0.13	333.4	3.95	271.3
194	O1079_SW	9	2.369481E-04	3.63	10.36	217	Yes	2.76	7.4	159.9	0.4	319.1	10.74	206.6
861	O1080_SW	1	2.632757E-05	2.08	9.1	217	Yes	0.22	2.6	306.5	0.05	55.1	3.42	357.4
893	O1081_SW	1	2.632757E-05	3.35	13.9	217.2	Yes	0.51	4.4	158.2	0.2	89.1	5.34	120
4	O1082_SW	116	3.053998E-03	2.39	6.94	217.3	Yes	1.42	9.33	93.4	0.34	334.5	10.3	214.6
387	O1083_SW	28	7.371719E-04	3.09	8.2	217.3	Yes	1.33	9.91	101.6	0.38	335.9	11.3	216
866	O1084_SW	3	7.898270E-05	1.17	4.7	217.3	Yes	1.05	8.43	82.9	0.31	259.5	7.83	209.8
658	O1085_SW	5	1.316378E-04	2.54	8.5	217.5	Yes	1.71	5.5	156.2	0.39	12.6	9.61	196.1
575	O1086_SW	2	5.265514E-05	1.94	8	217.6	Yes	1.07	6	138.6	0.55	294.9	7.83	158.4
775	O1087_SW	3	7.898270E-05	1.96	8.13	217.8	No	NaN	NaN	NaN	0.26	241.7	7.08	242
101	O1088_SW	32	8.424822E-04	2.9	7.93	218	Yes	1.32	9.82	101.7	0.23	121.2	10.87	217.9
585	O1089_SW	21	5.528789E-04	4.01	9.44	218.1	Yes	1.34	10.4	119.5	0.43	329	12.9	218.5
317	O1090_SW	5	1.316378E-04	4.45	12.7	218.2	No	NaN	NaN	NaN	0.35	127.8	10.12	218.2
755	O1091_SW	1	2.632757E-05	2.22	5.2	218.9	Yes	1.52	12.4	132.1	0.15	213	11.75	227.7
800	O1092_SW	1	2.632757E-05	2.43	6.1	219	Yes	2.04	5.5	313.6	0.47	4.4	12.06	341.8
927	O1093_SW	2	5.265514E-05	3.57	9.35	219.3	No	NaN	NaN	NaN	0.54	274	12	217.6
946	O1094_SW	1	2.632757E-05	1.11	5	219.9	Yes	0.86	7.3	81.8	0.16	116.4	7.41	208.1
545	O1095_SW	2	5.265514E-05	1.79	5	220.5	Yes	1.34	6.4	35.2	0.29	348.5	9.95	202.6
730	O1096_SW	5	1.316378E-04	4.43	12.86	222.1	Yes	1.32	14.5	96.3	0.55	351.8	11.1	231.7
1157	O1097_SW	1	2.632757E-05	4.02	12.8	223	No	NaN	NaN	NaN	0.5	327.3	8.84	224.3



TECHNICAL REPORT

No.: **I-RL-3A00.00-1000-941-PPC-001 rev.A**

Project: **SANTOS BASIN NORTHERN PRE-SALT FIELDS**

Sheet: **87 of 89**

Title: **DURATION OF EXTREME CURRENT PROFILES AND CLUSTERS OF SIMULTANEOUS METEOCEAN CONDITIONS**

Cluster	Name	Occurrence		Wave (Peak 1)			Wave (Peak 2)			Current		Wind		
		N	%	Hs	Tp	Dir	Is there?	Hs	Tp	Dir	Speed	Dir	Speed	Dir
914	O1098_SW	4	1.053103E-04	4.03	10.25	223.1	Yes	1.43	11.3	143.7	0.4	324.3	13.7	227.8
1185	O1099_SW	1	2.632757E-05	1.42	7.3	223.1	Yes	1.11	9.2	155.2	0.62	19.8	8.89	235
225	O1100_SW	32	8.424822E-04	2.79	7.39	223.2	Yes	1.33	9.26	105.6	0.21	221.2	10.21	223.3
234	O1101_SW	40	1.053103E-03	2.83	8.22	223.4	Yes	1.21	8.98	80.6	0.31	300.9	10.95	217.8
307	O1102_SW	10	2.632757E-04	1.47	5.42	224.8	Yes	1.19	8.16	81.1	0.32	46.1	9.02	220.9
882	O1103_SW	2	5.265514E-05	6.36	9.8	225.2	No	NaN	NaN	NaN	0.36	342.3	14.57	228.7
792	O1104_SW	4	1.053103E-04	3.44	8.6	225.3	Yes	0.8	9.35	48	0.28	201.6	11.87	223.9
303	O1105_SW	35	9.214649E-04	1.98	6.21	225.7	Yes	1.45	9.05	94.4	0.37	335.7	10.1	222.5
814	O1106_SW	2	5.265514E-05	6.68	10.75	225.7	No	NaN	NaN	NaN	0.42	328.7	16.17	242.8
842	O1107_SW	8	2.106205E-04	2.66	6.78	225.7	Yes	1.97	13.9	155.2	0.31	207.5	10.28	226.2
886	O1108_SW	1	2.632757E-05	1.7	4.5	228.1	Yes	1.65	5	52.6	0.5	280.7	7.66	219.8
1033	O1109_SW	1	2.632757E-05	2.02	8	228.2	No	NaN	NaN	NaN	0.15	61.4	6.49	246.1
286	O1110_SW	22	5.792065E-04	5.07	10.1	228.9	Yes	1.11	10.48	109.7	0.41	360	14.41	232.7
1094	O1111_SW	2	5.265514E-05	3.81	7.5	229.1	No	NaN	NaN	NaN	0.17	267.6	10.74	237.6
874	O1112_SW	2	5.265514E-05	3.53	7.6	229.2	Yes	1.69	9	59.7	0.4	33.9	12.32	230.6
1132	O1113_SW	2	5.265514E-05	3.43	9.05	229.2	Yes	1.06	10	182.3	0.23	160.6	12.37	238.4
674	O1114_SW	7	1.842930E-04	4.17	8.26	230	Yes	1.76	8.8	66.9	0.24	231.7	12.03	235.9
571	O1115_SW	6	1.579654E-04	1.98	6.22	230.5	Yes	1.37	9.1	90.9	0.21	77.6	10.66	229.1
119	O1116_SW	16	4.212411E-04	5.18	9.11	231.4	No	NaN	NaN	NaN	0.46	17.9	12.79	234.8
786	O1117_SW	1	2.632757E-05	2.37	11.5	232.6	No	NaN	NaN	NaN	0.29	307.2	7.24	186.6
986	O1118_SW	1	2.632757E-05	5.15	8.2	233.5	No	NaN	NaN	NaN	0.23	265	12.69	246.1
644	O1119_SW	5	1.316378E-04	1.67	5.82	234.9	Yes	1.44	9.54	99.1	0.29	305	9.59	232.4
739	O1120_SW	2	5.265514E-05	2.85	9.4	235.4	No	NaN	NaN	NaN	0.42	190.4	8.6	198.4
181	O1121_WSW	34	8.951373E-04	3.66	8.86	236.7	Yes	1.23	9.79	105.8	0.34	1.7	12.5	235.7
295	O1122_WSW	16	4.212411E-04	1.83	6.71	237.3	Yes	1.49	9.75	106.8	0.23	156.2	9.34	234.5
771	O1123_WSW	2	5.265514E-05	7.71	9.85	237.4	No	NaN	NaN	NaN	0.25	333.8	15.57	243.6
463	O1124_WSW	7	1.842930E-04	2.79	9.27	237.5	Yes	1.65	9.8	117.3	0.34	359.1	9.43	227.8
856	O1125_WSW	5	1.316378E-04	1.86	6.86	237.9	Yes	1.28	9.04	117.4	0.27	348.6	9.68	241.6
552	O1126_WSW	1	2.632757E-05	0.8	5.5	239.3	Yes	0.69	6.5	67.6	0.29	35.3	7.21	210.4
614	O1127_WSW	4	1.053103E-04	3.18	7.55	242	Yes	2.15	10	156.5	0.22	80.6	10.98	244.3
638	O1128_WSW	18	4.738962E-04	4.29	9.12	242.2	Yes	1.2	8.85	102.4	0.33	19.1	13.33	246.4
713	O1129_WSW	5	1.316378E-04	5.79	10.06	242.5	No	NaN	NaN	NaN	0.41	81.9	14.97	247.8
993	O1130_WSW	6	1.579654E-04	2.48	8.23	242.9	Yes	1.51	9.67	122.5	0.27	40.1	11.08	247.8
663	O1131_WSW	1	2.632757E-05	4.59	9.7	243.3	Yes	1.93	10	140.9	0.28	245.2	16.24	259.8
1091	O1132_WSW	1	2.632757E-05	3.03	8	243.3	Yes	1.91	8.7	86.1	0.12	269.1	13.3	251.3
925	O1133_WSW	1	2.632757E-05	6.01	9.3	243.6	No	NaN	NaN	NaN	0.36	60	13.45	247.9
319	O1134_WSW	16	4.212411E-04	2.44	7.53	245	Yes	1.28	8.94	116.4	0.3	57.3	11.05	246.3
680	O1135_WSW	3	7.898270E-05	7.15	10.03	245.2	No	NaN	NaN	NaN	0.31	306.5	16.69	256.9
1017	O1136_WSW	2	5.265514E-05	5.01	9.1	245.5	No	NaN	NaN	NaN	0.37	116.1	12.62	245.4
1183	O1137_WSW	1	2.632757E-05	4.5	10.1	245.6	Yes	1.06	9.7	48.6	0.36	76.3	14.67	243.6
482	O1138_WSW	17	4.475686E-04	2.63	7.62	246.1	Yes	1.72	9.96	102.1	0.34	24.7	11.34	246.9
1045	O1139_WSW	3	7.898270E-05	7.75	10.77	246.3	No	NaN	NaN	NaN	0.22	288.7	16.45	255.2
1174	O1140_WSW	1	2.632757E-05	0.95	4.5	246.8	Yes	0.94	6.5	34.5	0.19	250.6	7.98	227.5
1051	O1141_WSW	1	2.632757E-05	0.96	5.8	247.6	Yes	0.46	3.4	319.4	0.21	1.1	4.62	328.7
1015	O1142_WSW	1	2.632757E-05	1.85	6.1	247.8	Yes	1.1	7.4	82.4	0.11	185.5	10.41	253
496	O1143_WSW	5	1.316378E-04	1.61	5.52	247.9	Yes	1.28	8.56	73.8	0.36	23.9	10.61	241.1
1076	O1144_WSW	2	5.265514E-05	4.49	10.25	248.1	Yes	1.08	11.9	117.1	0.29	332.5	15.73	255.9
656	O1145_WSW	7	1.842930E-04	5.87	10.1	249.3	Yes	2.18	11.2	199.9	0.17	261.4	15.8	260.9
517	O1146_WSW	4	1.053103E-04	2.86	8.9	249.4	Yes	1.35	9.3	64.3	0.34	14.6	10.1	239.5
143	O1147_WSW	2	5.265514E-05	3.63	10.5	249.9	No	NaN	NaN	NaN	0.39	191.1	8.16	238.5



TECHNICAL REPORT

No.: **I-RL-3A00.00-1000-941-PPC-001 rev.A**

Project: **SANTOS BASIN NORTHERN PRE-SALT FIELDS**

Sheet: **88 of 89**

Title: **DURATION OF EXTREME CURRENT PROFILES AND CLUSTERS OF SIMULTANEOUS METEOCEAN CONDITIONS**

Cluster	Name	Occurrence		Wave (Peak 1)			Wave (Peak 2)			Current		Wind		
		N	%	Hs	Tp	Dir	Is there?	Hs	Tp	Dir	Speed	Dir	Speed	Dir
424	O1148_WSW	2	5.265514E-05	4.91	8.4	250.8	No	NaN	NaN	NaN	0.47	309.8	12.36	258.7
890	O1149_WSW	4	1.053103E-04	3.8	8.9	250.8	Yes	2.25	9.4	142.3	0.25	188.6	12.9	256
504	O1150_WSW	13	3.422584E-04	3.5	8.25	251.1	Yes	1.44	9.46	77.5	0.36	38.9	13.02	249.1
718	O1151_WSW	5	1.316378E-04	5.3	10.72	251.4	Yes	1.32	10.8	192.3	0.27	5.3	16.04	257.2
466	O1152_WSW	6	1.579654E-04	4.37	9.33	253	Yes	1.49	9.72	128.8	0.16	108.6	14.32	260.2
1182	O1153_WSW	1	2.632757E-05	5.53	10.9	253.9	Yes	1.28	10.8	207	0.4	5.5	16.59	256.2
253	O1154_WSW	16	4.212411E-04	2.36	6.83	254	Yes	1.8	8.52	79.8	0.4	34	11.51	249.2
769	O1155_WSW	3	7.898270E-05	3.55	8.4	255.1	Yes	1.33	9.85	131.4	0.21	138.7	13.18	261.3
1116	O1156_WSW	1	2.632757E-05	1.45	5.4	255.3	Yes	1.28	7.5	69.5	0.13	297.7	9.54	254.8
667	O1157_WSW	1	2.632757E-05	2.17	6.1	256.1	Yes	1.76	6.8	131	0.4	187.8	9.31	249.7
1074	O1158_WSW	1	2.632757E-05	3.24	8	256.3	Yes	3	14.9	203	0.43	122.9	12.81	268.7
958	O1159_WSW	2	5.265514E-05	1.79	7.95	256.5	Yes	0.96	4.55	173.9	0.92	259.4	7.64	153.1
998	O1160_WSW	2	5.265514E-05	3.52	8.35	257.2	Yes	3	14.6	187.8	0.42	136.1	12.55	262.9
798	O1161_WSW	2	5.265514E-05	1.79	8.15	257.3	Yes	0.09	1.65	2.7	0.85	291.7	2.83	12.5
454	O1162_W	12	3.159308E-04	1.84	6.33	258.8	Yes	1.5	8.29	104.9	0.25	0.8	9.83	256
1022	O1163_W	1	2.632757E-05	1.6	6.9	260.2	Yes	0.61	3.4	200.2	0.33	323.3	6.02	179.8
637	O1164_W	2	5.265514E-05	3.2	7.7	263.8	Yes	1.87	8.6	43.5	0.52	65.9	14.73	248
1126	O1165_W	1	2.632757E-05	1.26	4.7	264.3	Yes	1.07	6.5	90.5	0.24	123.5	7.43	260.6
472	O1166_W	2	5.265514E-05	3.99	8.3	265.7	Yes	1.61	8.2	57	0.08	0.5	15.01	273.4
963	O1167_W	1	2.632757E-05	1.9	5.7	268.1	Yes	0.42	3.3	7.8	0.23	24.6	4.43	53.4
1087	O1168_W	1	2.632757E-05	3.68	9.1	272.1	Yes	1.47	9	38.4	0.35	111.8	13.19	273.7
328	O1169_W	2	5.265514E-05	3.04	7.1	272.3	Yes	2.1	8.9	113.8	0.14	298.4	14.74	259.6
209	O1170_W	9	2.369481E-04	2.1	6.19	276.4	Yes	1.78	8.92	68.9	0.39	56.8	11.7	267.1
457	O1171_W	7	1.842930E-04	2.63	7.64	279.8	Yes	1.9	10.09	93.9	0.41	23.2	12.14	276.3
594	O1172_W	1	2.632757E-05	3.25	7.9	281.1	Yes	1.58	8.2	75.1	0.1	15.5	14.23	270.9
985	O1173_WNW	1	2.632757E-05	3.48	8.2	283.7	Yes	1.4	8.7	50.8	0.5	115	14.67	281.8
315	O1174_WNW	1	2.632757E-05	1.76	5.7	285.2	Yes	1.23	5.7	41.5	0.37	185.9	12.7	269.5
915	O1175_WNW	3	7.898270E-05	1.71	5.63	285.4	Yes	1.56	8.93	87.2	0.42	38.6	10.43	274.5
1012	O1176_WNW	2	5.265514E-05	2.07	6.85	285.7	Yes	1.71	7.85	76.8	0.35	7.7	9.98	281.2
717	O1177_WNW	4	1.053103E-04	1.82	8	289.2	Yes	1.16	5.07	219.7	0.48	317.2	5.93	209.7
885	O1178_WNW	1	2.632757E-05	2	4	292.7	Yes	1.51	9.9	69.7	0.15	250.5	11.71	279
898	O1179_WNW	3	7.898270E-05	2.03	5.3	295.2	Yes	1.67	11	88.6	0.23	352.5	11.09	297.2
782	O1180_WNW	1	2.632757E-05	1.88	7.5	295.5	Yes	0.74	4.1	194.3	0.54	275.5	6.38	167.9
678	O1181_WNW	1	2.632757E-05	3.16	7.5	298.2	Yes	1.54	8.4	50.9	0.68	121.3	14.79	285.8
871	O1182_NW	1	2.632757E-05	2.79	9.7	303.8	Yes	1.45	6.6	228.2	0.18	197.1	8.81	199.7
158	O1183_NW	5	1.316378E-04	2.47	6.84	307.2	Yes	2.14	8.24	60.3	0.47	26.3	12.83	294.7
750	O1184_NW	2	5.265514E-05	2.38	6.25	309.9	Yes	2.2	8.3	50.1	0.35	164.8	13.59	287.9
349	O1185_NW	2	5.265514E-05	1.04	4.45	320.6	Yes	0.99	7.3	59.3	0.37	329.1	7.72	309.9
1171	O1186_NW	1	2.632757E-05	1.28	4.9	324.2	Yes	1.26	7.1	61.6	0.45	178.9	10.57	306.3
675	O1187_NNW	1	2.632757E-05	1.91	6.7	326.9	Yes	1.51	5.5	218.8	0.54	291.3	8.02	199.4
1154	O1188_NNW	1	2.632757E-05	1.85	5.5	329.2	Yes	1.8	7.6	53.3	0.31	44.7	12.27	305.6
494	O1189_NNW	5	1.316378E-04	2.38	6.52	329.3	Yes	2.04	8.26	60.4	0.41	88	12.22	315.6
691	O1190_NNW	3	7.898270E-05	1.41	5.17	333.3	Yes	1.32	6.97	52	0.3	23.3	9.4	315.1
857	O1191_NNW	1	2.632757E-05	2.09	8.1	334.4	Yes	0.76	3.9	257.3	0.34	1	5.58	250.7
876	O1192_NNW	3	7.898270E-05	1.84	5.73	334.6	Yes	1.69	7.67	51.1	0.19	342.6	11.06	314.3
1124	O1193_NNW	2	5.265514E-05	1.69	5.65	348.7	Yes	1.52	10.8	92.3	0.31	173.7	9.72	333.8



PETROBRAS

TECHNICAL REPORT

No.: **I-RL-3A00.00-1000-941-PPC-001 rev.A**

Project: **SANTOS BASIN NORTHERN PRE-SALT FIELDS**

Sheet: **89 of 89**

Title: **DURATION OF EXTREME CURRENT PROFILES AND
CLUSTERS OF SIMULTANEOUS METOCEAN CONDITIONS**

Data Processing and Contribution to Document Execution

Authors (Version 0):

Gabriela Fonseca Medeiros - CENPES/PDDP/TEO

Eric Oliveira Ribeiro – CENPES/PDDP/TEO

Luis Manoel P. Nunes – CENPES/PDDP/TEO

Document Review (Version 0):

Jose A M Lima – CENPES/PDDP/TEO

Layout:

Gilmara Duarte Lima Furtado - TetraTech

Document Version 0: I-RL-3A00.00-1000-941-PPC-001.doc - 16/Oct/2017

Authors (Version A):

Jose A M Lima - CENPES/PDDP/TEO (Included notice about document property provided by Law Department)

Document Review (Version A):

Wellington Ceccopieri Belo – CENPES/PDDP/TEO

Document Version A: I-RL-3A00.00-1000-941-PPC-001_rev.A.doc - 16/07/2018