



EXERCISE HYDRUS

ISLAND VIEW TIER 2 OIL SPILL EQUIPMENT DEPLOYMENT EXERCISE REPORT



30TH NOVEMBER 2022

ITEM	TABLE OF CONTENTS	PAGE
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1	Abbreviations	2
2	Introduction	3
3	Exercise Overview	4
4	Simulated Scenario	6
5	The Exercise	7
6	Exercise Observations	14
7	Conclusion	16
8	Attendance Register	17

1. ABBREVIATIONS

AMSOL	African Marine Solutions.
EFD	Engineering Flow Diagrams
ERT	Emergency Response Team
FCP	Forward Control Post.
HSSE	Health Safety Security Environment.
IC	Incident Commander
ICS	Incident Command System.
LOPC	Loss of Primary Containment
LSFO	Low Sulfur Fuel Oil.
MFO	Marine Fuel Oil
PPE	Personal Protective Equipment.
SAMSA	South African Maritime Safety Authority.
SAPREF	Shell and BP South African Petroleum Refinery.
SAPS	South African Police Service.
MSDS	Material Safety Data Sheet.
TL	Team Leader.
TNPA	Transnet National Port Authority.

2. INTRODUCTION

In this report we outline:

- ❖ The Overview of the Oil Spill Tier 2 Equipment Deployment Exercise: This outlines what the Exercise is about as well as the Purpose and Objectives of the Exercise.
- ❖ The Simulated Scenario: A scenario was drawn up by various stakeholders in several planning meetings prior to the exercise.
- ❖ The Exercise: The Control Framework Tier 2 Equipment Deployment Exercise Requirements and the information is outlined.
- ❖ Observations: These are the learnings from the Exercise. This section outlines the overall performance of the participants. We discuss both the Positives and Areas for improvement of the Exercise in terms of the execution of tasks by the participants/Stakeholders.
- ❖ Appendix: The Appendix displays the List of Participants for the exercise.

The purpose of the After Action Report is to:

- ❖ Analyse the Exercise outcomes.
- ❖ Identify strengths to be maintained and built upon.
- ❖ Identify potential areas for further improvement.



3. EXERCISE OVERVIEW

Exercise Name	Exercise Hydrus
Type of Exercise	Oil Spill Equipment Deployment Tier 2
Exercise Date	30 th November 2022
Duration	09:00 – 12:00
Venue	Island View 10 Causeway Corner
Sponsor	SAPREF

Island View Tier 2 Oil Spill Equipment deployment exercise was planned and executed by SAPREF and various stakeholders.

The Participants of the Tier 2 Exercise were stakeholders from Durban such as:

- SAPREF
- AMSOL
- TNPA FIRE
- TNPA POLLUTION
- SPILL TECH
- CUTLER MANAGEMENT
- SAMSA
- SHELL – MARINE OPERATIONS SPECIALIST
- HARBOUR MASTER DEPARTMENT
- BLENDCOR
- VOPAK
- ENGEN
- TOTAL Energies

EXERCISE PURPOSE

The purpose of the exercise was to assess the ability of SAPREF and industry to respond to a Tier 2 Oil Spill Equipment Deployment at Island View, Port of Durban. The HSSE, Spill Preparedness Control Framework & Response Specification states that the Company shall exercise its Spill Response plan at a Tier 2 level at least once every two years.

In addition to the control framework requirements, we wanted to test the capability of our stakeholders to respond to a tier 2 oil spill. This exercise was purely based on Equipment deployment and not the response times to the exercise.

EXERCISE OBJECTIVES

The following objectives were developed for the Oil Spill Equipment Deployment exercise:

- Conduct a Tier 2 Oil Spill Equipment Deployment Exercise in line with the Shell HSSE Control Framework exercise requirements.
- Exercise SAPREF's capability to respond to a Tier 2 oil spill with support from stakeholders.
- Exercise the ability to establish a Forward Control Post and assemble a capable Incident Management Team to meet the incident needs.
- Exercise the interface between SAPREF and stakeholders during an emergency at Island View.

The above objectives were tested using an Equipment Deployment exercise. All said stakeholders played their respective roles in the exercise.

EXERCISE PLANNING TEAM

	PLANNING TEAM
SAPREF	CAPT. AMITH SINATH CAPT. RAJAN DANDEKAR DILESH BHUGWANDEEN THOBEKA MASONDO, MICHAEL CLARK VIKESH JEDIDIAH DIONNE PILLAY
AMSOL	KREGAN REDDY
TNPA FIRE	INDRIN NAIDOO ERIC ZONDI
TNPA POLLUTION	MBALI NOMVULA (As per attached Attendance Register)
SPILL TECH	ACKSHAY MOONILALL NICK BERNDT
CUTLER MANAGEMENT	SAGIE NAICKER ZELDA GOUWS PELAN SOOBRAMONEY LEN NAIDOO JAN VAN VUUREN
SAMSA	CAPT. HOPEWELL MKHIZE CAPT. RODREGO THOMPSON
SHELL	CAPT. AKESH HIRALAL
HARBOUR MASTER DEPARTMENT	MATHILDA LEKALA
ENGEN	YUKESH MAHARAJ

4. SIMULATED SCENARIO



THE SCENARIO

During the loading operation of MFO at BERTH 10.

- MFO is sprayed under pressure into the air and envelops ship's manifold. A shore contractor delivering to stores onto the ship notice the leak and alerts the ship deck operator, leak results in escalation of a fire on the deck and the ships lines damaged causing an LOPC on the Quay side spilling onto the harbor seaside.
- At the time of the incident the designated personnel tasked to observe the operation on the quay was not present.
- The alarm was raised by the deck watchman of vessel.
- MFO - Approximately 82.50m³ of product spilled on water in the bay.

5. THE EXERCISE

	Sequence of Events
06:30	<ul style="list-style-type: none"> • Spill Tech and TNPA arrived at Causeway Corner to set up the equipment and tents at the Staging area. • One Spill Tech boat was deployed. • Established FCP/staging area/demarcated area for observers.
08:27 – 09:00	Kick off meeting
09:00 – 09:15	Exercise Objectives meeting
09:15	Commenced Exercise
09:32	TNPA deploying Desmi Skimmer
09:34	Spill Tech deploying Fence boom
09:40	TNPA setting up Fast Tank
09:51	Fence boom washed up against the shore
09:55	Spill Tech attempt to re-position fence boom and connected two anchors
10:00	<ul style="list-style-type: none"> • Desmi Skimmer deployed. • Two leaks detected on Fast Tank
10:10	Start of the Exercise tour for Observers.
10:15	<ul style="list-style-type: none"> • Spill Tech deployed Wier Skimmer and hooked it up to the Super Sucker • Spill Tech deployed Hydrophobic absorbents and initiated Manual Recovery • Spill Tech Set up Fast Tank and hooked it up to the Compressor and air pump
10:35	End of Exercise Teams start to de-mob
10:40 – 11:30	De-brief meeting

Staging area established at Causeway Road



Staging area established at Causeway Road



Staging Equipment to be deployed



Staged equipment to be deployed



Sausage boom in the canal



Setting up Fast Tank



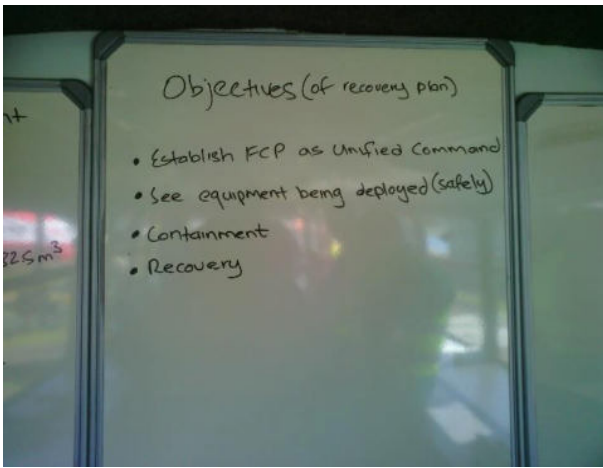
FCP established



Kick Off Meeting



Objectives of Exercise



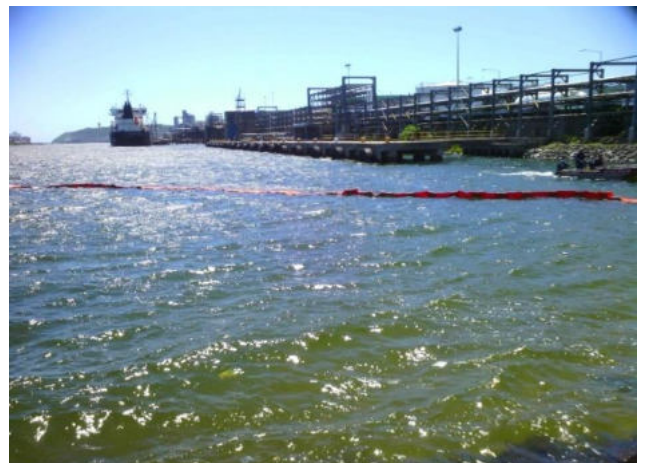
Port Of Durban Nautical Chart



Spill Tech deploying Fence Boom



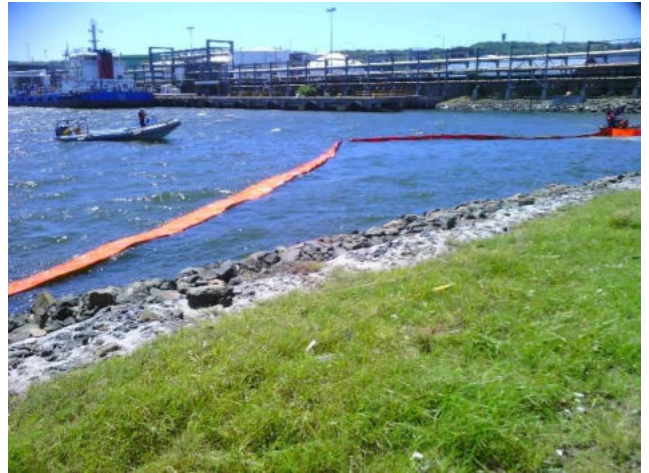
Spill Tech Fence Boom Deployed



Fence boom washed up against the shoreline



Second attempt to re-position fence boom



Deploying Desmi Skimmer (TNPA)



Deploying Desmi Skimmer (TNPA)



Approaching Barge



Leak in the Fast Tank



Spill Tech Fast Tank



Spill Tech Fast Tank



Spill Tech Deploying Weir Skimmers



Spill Tech Manual Recovery



Exercise Tour for Observers



End of Exercise - Debrief



Spill Tech and TNPA Equipment Deployment Pre-Exercise Practice (24th November 2022)

Spill Tech Watercraft



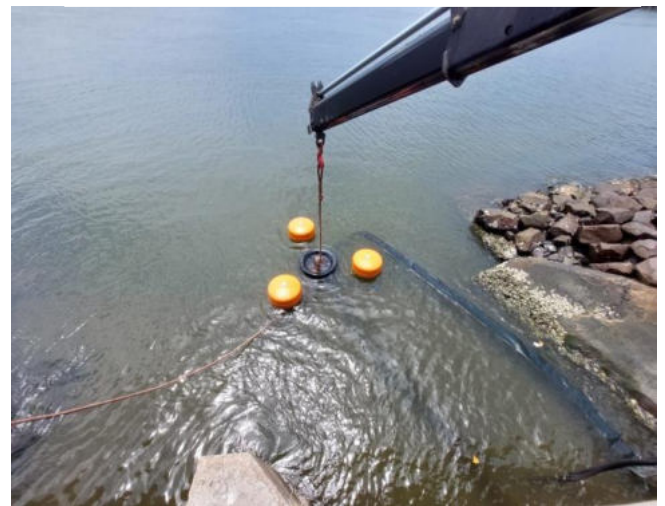
Setting up Desmi Skimmer



Deploying Desmi Skimmer



Desmi Skimmer deployed



Setting Up Fence Boom



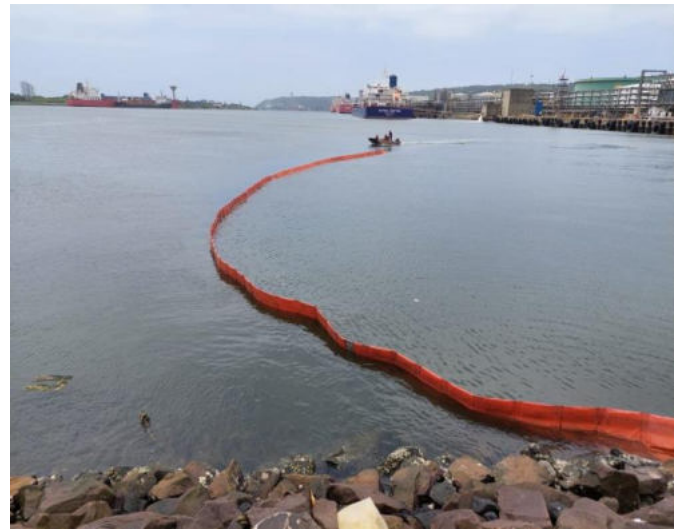
Deploying Fence Boom



Deploying Fence Boom



Deploying Fence Boom



Fence Boom deployed



6. EXERCISE OBSERVATIONS

The observation teams observed how the different stakeholders conducted their tasks in terms of meeting the objectives to the exercise. Taking into account, Time Management, Utilisation of resources, Effective communication and Overall willingness. The following observations have been made:

POSITIVES

- The exercise objectives were tested.
- The FCP was manned by the stakeholders as planned (TNPA Senior Fire Officer as IC).
- Communication mode in 2020 had no hardware that resulted in communication breakdown, 2022 radios were used that improved on the management of the incident from the FCP to Branch director followed by the field responders, note some learning's captured below.
- Foam was not deployed due to adverse weather conditions; however, equipment was deployed fulfilling the main purpose of the exercise.
- Good stakeholder engagement identified from pre-planning to execution of exercise.
- Floating skimmers and Super Sucker were effectively deployed and operational.
- Fast tanks, skimmers and Super Sucker used to contain the spill worked well with the strategy, however there are some concerns which will be outlined under "Areas for improvement"
- Spill tech advised the FCP that a Back-up plan was in place to call on additional resources from Spill Tech satellite branches in KZN if required.
- Cutler Security access and permits issued in good time.
- IC handover from SAPREF Team Leader to TNPA Senior Fire Officer went smoothly as planned.
- Although the full ICS structure was not implemented during this exercise some key aspects of ICS were followed to allow a Forward control post to be set up.
- Resources in field appeared to be familiar with equipment used.
- The canal was boomed before the start of the exercise. This was a learning from the previous exercise
- Spill Tech appointed two Safety Officers for the exercise. One Safety Officer for the onshore and the other offshore
- The Nautical Chart of the Port of Durban were available at the FCP. This was a learning from the previous exercise.
- ICS Documentation and relevant MSDS were available at the FCP.
- Refreshments and shelter were available onshore for the responders and observers.
- Spill Tech demonstrated more than one method off recovery which was a good learning initiative for the exercise observers. Recovery methods were:

1. Manual Recovery using Hydrophobic absorbents.
 2. Wier Skimmer connected to super sucker.
 3. Fast Tank connected to compressor and air pump.
- Spill Tech had skips available for waste which was generated from the recovery.
 - Toolbox Talks were conducted by all teams prior to the exercise.
 - Access control and staging was executed correctly as per Culter Security Plan
 - Pre-exercise Practice between TNPA and Spill Tech added value to exercise Hydrus as teams were familiar with each other's capabilities and equipment.
 - No HSSE incidents.

AREAS FOR IMPROVEMENT

- Communication:
 - Communication mode used (Radios) – Radio batteries depleted during exercise which resulted in poor communication.
- Exercise objectives to be posted in FCP for the next exercise.
- Delays were incurred due an excessive number of enquiries from FCP who were not a part of the planning meetings
- Fence boom washed up ashore due to the strong wind. Spill Tech remedied the situation by pulling the fence boom away from the shoreline and adding two anchors to the fence boom to keep the boom in place. Training and coordinating gap identified for boom deployment.
- There were two leaks in one of the Fast Tanks
- One Fast Tank was rigged incorrectly. Weak points on the Fast Tank were not supported.
- The skipper was alone on one of the watercrafts.
- No clock/time was present in the FCP.
- Some responders were not donned in full PPE.
- It was advised that mesh material be used on the Desmi and Wier skimmers to avoid waste build up that could affect the functioning of the skimmers.

7. CONCLUSION

The Island View Tier 2 Oil Spill Equipment Deployment Exercise was a hands-on exercise, this allowed the participants to gain constructive experience with regards to Equipment Deployment.

Due to the consistent interest and willingness of the participants throughout the exercise, their subject knowledge enhanced each time a planning meeting was completed. All participants now have practical experience on Oil Spill Equipment deployment.

All stakeholders who were part of planning, positively participated in the exercise.

The overall Objectives of the Tier 2 Oil Spill Equipment Deployment Exercise were achieved.



8. ATTENDANCE REGISTER

SAPREF Business Management System

Originator : P. Grey, HTZ
Doc Controller : D. Moodley, H54

Level : 2
Doc ID : SITE.SF.0002

Warning: Paper copies are uncontrolled.

Please check the controlled version on the SAPREF Web. This page was opened on: Tuesday, November 29, 2022

Attendance Register

Please ensure that the register is filled in correctly and filed or sent to HL1 (for training only by the end of the month in which the course is completed.)


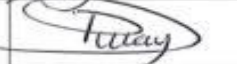




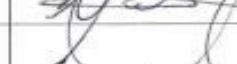
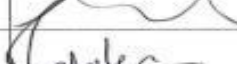
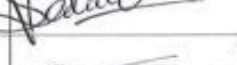
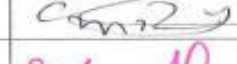

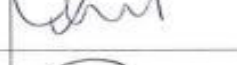
DATE: 30 NOVEMBER 2022

FACILITATOR/ CHAIR: AMITH SINATH & DILESH BHUGWANDEEN **COMPANY:** SAPREF

COURSE/ MEETING/ EVENT: 2022 TIER 2 OIL SPILL EQUIPMENT DEPLOYMENT (PD) Fire at Berth 10 Loading line still attached to Ship (Credible Emergency - PROD.IV.WI.0126)

DURATION: 4HR

ROOM N°/ VENUE: CAUSEWAY BERTH10

N°	NAME	SAPREF STAFF N°/ ID N°	SECTION / COMPANY	SIGNATURE
1	Amith Sinath	4000865	SAPREF	
2	Dionne Pillay		SAPREF	
3	Indrin Hardeo	-	TNPA FIRE	
4	ZAN HLONGWANE	-	SAMSA	
5	Nomvula Mbezi		TNPA	
6	LEN NAIDOO	-	CURVED OPS	
7	Akesh Hirani	-	SHELL	
8	Vikesh Jeddiah	-	SAPREF	
9	Mfikisela Mlamini	-	TNPA	
10	Sandile Mwandla	4000856	SAPREF HSE/EMS	
11	Sitans Fawcett		SPILL TECH	
12	Galen Goen	-	SPILL TECH	

SAPREF Business Management System

Originator : P. Gray, HT2
 Doc Controller : D. Hoodley, MS4

Level : 2
 Doc ID : SITE.5F.0002

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Please check the controlled version on the SAPREF Web. This page was opened on: Tuesday, November 29, 2011

Attendance Register

N°	NAME	SAPREF STAFF No/ ID No	SECTION / COMPANY	SIGNATURE
13	Eric Zondi	0046018	TNPA	
14	Mzwandile TSEKU	0046729	TNPA FIRE	
15	Charles Bishop	0153696	TNPA FIRE	
16	Nayiro Kulebe	caud	Spill Tech	
17	MARTIN WALLACE	AMSOL	AMSOL	
18	Robus Human	SAPREF	SAPREF	
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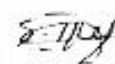
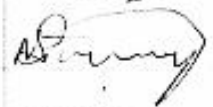
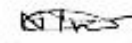
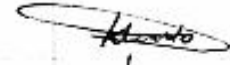




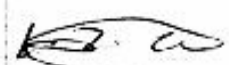
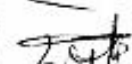
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FACILITATOR/ CHAIR: AMITH SINATH & DILESH BHUGWANDEEN COMPANY: SAPREF



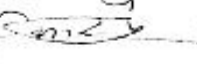
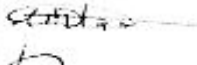
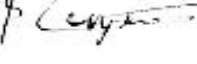
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DURATION: 4HR

ROOM N°/ VENUE: CAUSEWAY BERTH10

N°	NAME	SAPREF STAFF N°/ ID N°	SECTION / COMPANY	SIGNATURE
1	Nonvula Mbali		TNPA	
2	Sikhumbuzo THUSI		TNPA	
3	S.I. MHLONGO		TNPA	
4	N.S. MANDELE		TNPA	
5	NY MNGWENWE		TNPA	
6	G.G. KHAWULA		TNPA	
7	VE MPUNGOSE		TNPA	
8	MMI MOSIEN		TNPA	
9	L. SCROHE		TNPA	
10	S. ZUGU		TNPA	
11	L. ZUGU		T.N.P.A	
12	L. Gwala		" "	

Attendance Register

No	NAME	SAPREF STAFF No/ ID No	SECTION / COMPANY	SIGNATURE
13	Bongani Pratiso		TNPA	
14	Alkasimathi Shongase		TNRA	
15	Mhlanisela Ulanini	45382	TNPA	
16	Londela Damini		TNPA	
17	Fuzi ni Raymond	0610015057080	TNPA	
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