

TRANSNET



delivering freight reliably



**Transnet Pipelines**  
**Presented at the SAPIA HSEEC**  
**Date : 2 February 2021**

# Content

1. Summary
2. Fuel Theft Statistics
3. Examples of Typical Sites
4. Remediation process
5. Challenges



# SUMMARY

## BACKGROUND AND OVERALL ECONOMIC IMPACT:

- Transnet Pipelines own operate 3800km of petroleum pipelines that transport, Diesel, Petrol, Avtur, and Gas
- Transnet Pipelines transports approximately 250 million litres of refined products (petrol and diesel), 100 million litres Crude Oil and 25 million litres Jet fuel per week. The pipeline network traverses 5 provinces through many rural, semi-rural and urban areas.
- Transnet Pipelines supplies approximately 80% of all fuel to Gauteng.
- In 2006/2007 it was assessed that if supply of product is disrupted, it will cost the South African economy approximately R 1 Billion per day.

## OVERALL SUMMARY OF PRODUCT THEFT INCIDENTS:

- There has been a significant increase in product theft / attempted product theft since the beginning of the 2020 financial year. Initially the product thefts were occurring mainly from block valves, however in the recent past, there has been an increase of theft from the actual line whereby perpetrators install makeshift valves directly on the line from which they are able to siphon product.
- **93** such incidents have been recorded in the current financial year(20/21) alone, with **181** previous FY 19/20 with a comparative of **5** incidents in the FY 18/19 and **nil** incidents in the 2017/18 financial year.
- In addition to the economic impact of the theft incidents, other risks include: reputational damage, safety of communities, safety of respondent employees, revenue loss, damage to infrastructure, **environmental damage**, etc.

## ENVIRONMENTAL DAMAGE:

- TPL has about 50 areas that have been affected as the results of the fuel theft, where product spillages into the ground that resulted in a significant environment impact.
- TPL is busy with the Containment and Recovery, Contaminated Site Assessment and Remediation & Rehabilitation at these sites at an exorbitant cost
- TPL is looking for ideas from the industry on optimum way of contain, recover and remediate.

# FUEL THEFT STATISTICS

Statistical Information for Product theft incidents			
Details	FY 19/20	FY 20/21	Total
Actual Theft Incidents	143	83	226
Attempted Theft Incidents	38	10	48
<b>Total</b>	<b>181</b>	<b>93</b>	<b>274</b>
<b>Illegal Pipeline connection Holes</b>	<b>28</b>	<b>74</b>	<b>102</b>
Cases Reported	80	63	143
Suspects arrested	84	26	110
Vehicles Impounded	25	6	31
Tankers Impounded	30	10	40



# FUEL THEFT STATISTICS

## Product Lost

Description	2019/2020 Apr 19 – Mar 2020	2020/2021 Apr 20 – Oct 20	Total
Total number (lt)	11 873 914	6 597 194	18 471 108
Diesel (lt)	6 872 786	4 165 777	11 038 563
ULP (lt)	4 737 891	2 010 581	6 748 472
Avtur (lt)	110 422	0	110 422
Crude (lt)	152 815	330 000	482 815
Intermixture (lt)		90 836	90 836

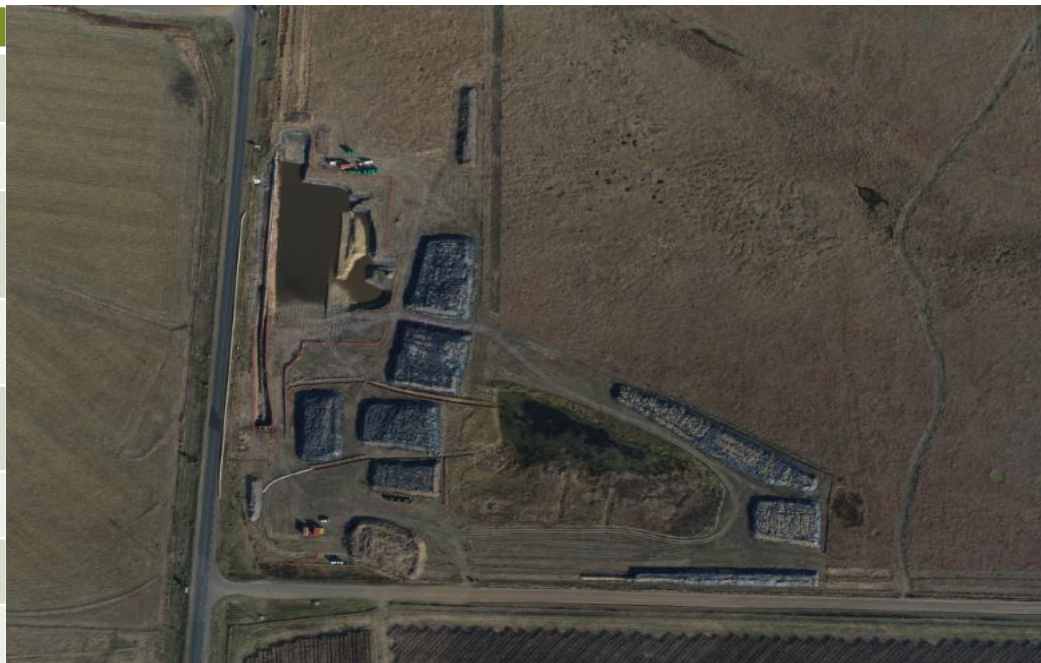
\*Suspected signs of theft estimated volume loss is equivalent to one tanker of 40 000lt is stolen.

# EXAMPLE OF TYPICAL SITES

## ENVIRONMENTAL IMPACT: BV111 FIRE INCIDENT

### General Information

<b>Location</b>	Block Valve 111 between Secunda and Standerton, Mpumalanga
<b>Incident Date / Time</b>	Sunday 21 <sup>st</sup> July 2019 at 03h00
<b>Description of occurrence</b>	Petrol spillage which occurred as a result of theft whereby unknown persons tampered with the plug valve inside the block valve chamber
<b>Product Lost</b>	±900,000 litres, some of which was burnt by the fire. About 41,400 litres was recovered.
<b>Area Impacted</b>	±13,000m <sup>2</sup> of which 6,400m <sup>2</sup> is within a wetland. 147,000m <sup>3</sup> of contaminated soil to be treated
<b>Receiving Environment</b>	Agricultural properties and the R546 road
<b>Remediation strategy</b>	Accelerated mobile remediation (Liquid Fire)
<b>Est remediation costs</b>	R 35 667 416,80





# EXAMPLE OF TYPICAL SITES



## ENVIRONMENTAL IMPACT: DEVON INCIDENT

### General Information

<b>Location</b>	Devon in Mpumalanga
<b>Incident Date / Time</b>	Sunday 8 <sup>th</sup> December 2019 at 02h00
<b>Description of occurrence</b>	Diesel and petrol spillage which occurred as a result of theft whereby unknown persons tapped the exposed pipeline
<b>Product Lost</b>	Reportedly ±150,000 litres (prior to recovery of ±120,000 litres of diesel and ±80,000 litres of petrol)
<b>Area Impacted</b>	±62,700m <sup>2</sup> from the diesel spill. An additional area is contaminated with petrol
<b>Receiving Environment</b>	Surficial and subsurface soil, two dams, wetlands and potentially groundwater impacted
<b>Remediation strategy</b>	Accelerated mobile remediation (Liquid Fire)
<b>Est remediation costs</b>	R 40 926 994,60





# EXAMPLE OF TYPICAL SITES



## ENVIRONMENTAL IMPACT: PHOLA INCIDENT

### General Information

<b>Location</b>	Near Phola township, Mpumalanga
<b>Incident Date / Time</b>	Sunday 15 <sup>th</sup> December 2019
<b>Description of occurrence</b>	Diesel spillage which occurred as a result of theft whereby unknown persons tapped the exposed pipeline
<b>Product Lost</b>	±900,941 litres of diesel (prior to recovery of ±1,4 m litres of which 120,000 litres was drained from the line and 1,2 million litres skimmed from the river)
<b>Area Impacted</b>	11km downstream the Saalkapsruit stream plus 5 wetlands
<b>Receiving Environment</b>	Surficial and subsurface soil, stream, five wetlands and potentially groundwater impacted
<b>Remediation strategy</b>	In-situ bioremediation of impacted wetlands.
<b>Est remediation costs</b>	R 49 249 334,60





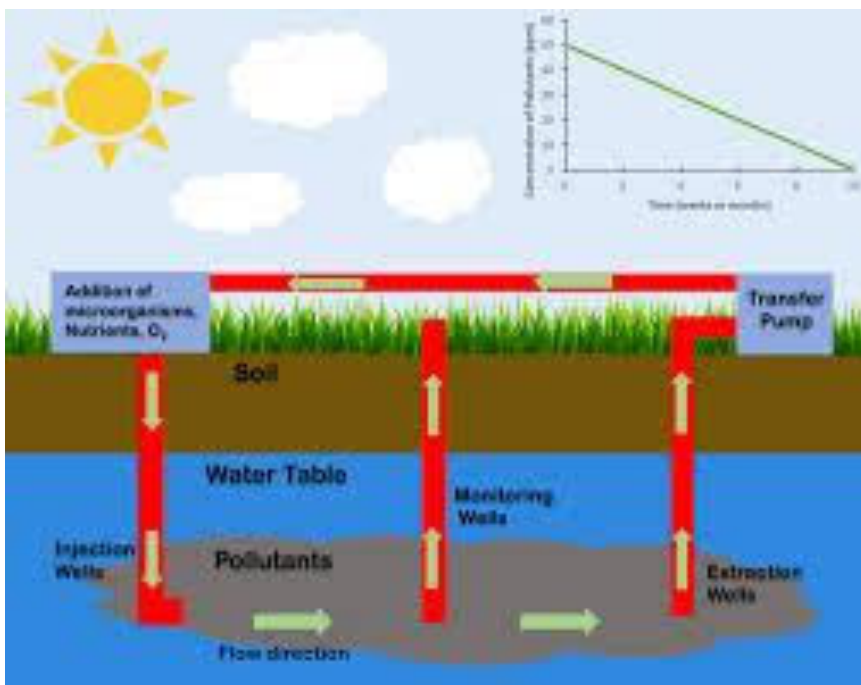
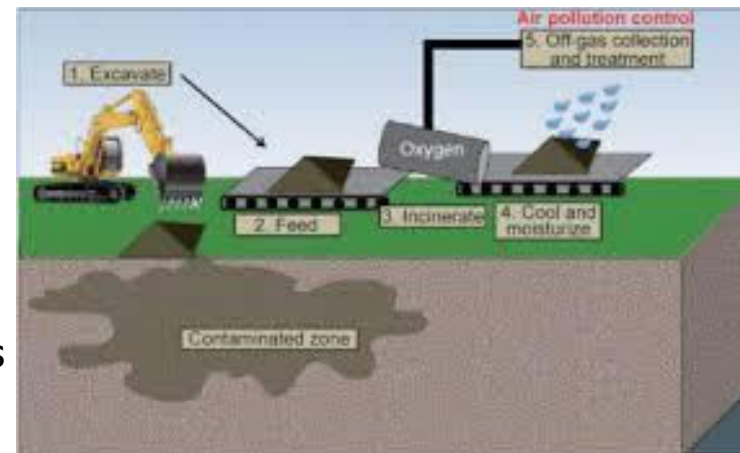


# REMEDIATION PROCESS

## PHASE 2: REMEDIATION PHASE

Remediation technique determined on a case by case basis:

- ✓ Dig & dump
- ✓ In-situ remediation
- ✓ Ex-situ remediation – traditional methods vs modern techniques





# CHALLENGES

- Number of Sites to manage
- Cost of remediation
- Limited Remediation contractors
- Stop the theft Incidents



# THANK YOU

## Contact details

- Address line 1
- Address line 2
- Postal Code
- Suburb Region

