



No. 01690

**A. GENERAL INFORMATION:**

1. Spill incident Number: 657132
2. Name of Location 18" ASSA - RUMUKEPE PIPELINE
3. Name of nearest community EGBEDA
4. State RIVERS LGA OGBA-EGBEMA NBONI
5. Type of Production facility/Installation PIPELINE Asset owner /District UIG/PI/NE SP

**B. INCIDENT INFORMATION:**

6. Details of incident

- a. Date of incident 6<sup>TH</sup> MAY, 2011
- b. Date/Period of investigation, 8<sup>TH</sup> MAY, 2011
- c. Description of spill point environment

- |  |       |       |
|--|-------|-------|
| <input type="checkbox"/> Firmed soil               | [Y] ✓ | [N]   |
| <input type="checkbox"/> Loose soil                | [Y]   | [N] ✓ |
| <input type="checkbox"/> Previously excavated area | [Y] ✓ | [N]   |
| <input type="checkbox"/> Under water               | [Y]   | [N] ✓ |
| <input type="checkbox"/> Swampy                    | [Y]   | [N] ✓ |
| <input type="checkbox"/> Exposed pipe surface      | [Y]   | [N] ✓ |

d. Description of leak point (tick as applicable);

- |  |       |       |
|--|-------|-------|
| <input type="checkbox"/> Drilled hole,                                 | [Y]   | [N] ✓ |
| <input type="checkbox"/> Hack saw cut,                                 | [Y] ✓ | [N]   |
| <input type="checkbox"/> Explosive tear,                               | [Y]   | [N] ✓ |
| <input type="checkbox"/> Complete Rupture                              | [Y]   | [N] ✓ |
| <input type="checkbox"/> Inward dent,                                  | [Y]   | [N] ✓ |
| <input type="checkbox"/> Well head tampering                           | [Y]   | [N] ✓ |
| <input type="checkbox"/> Failed Weld-on illegal hot tap valve,         | [Y]   | [N] ✓ |
| <input type="checkbox"/> Missing pipeline (flowline)                   | [Y]   | [N] ✓ |
| <input type="checkbox"/> Crude oil theft (illegal bunkering) point,    | [Y]   | [N] ✓ |
| <input type="checkbox"/> Third party tampering with Clamp Bolt/Nut,    | [Y]   | [N] ✓ |
| <input type="checkbox"/> Third party tampering with valve setting,     | [Y]   | [N] ✓ |
| <input type="checkbox"/> Third party tampering with flange Nuts/bolts, | [Y]   | [N] ✓ |
| <input type="checkbox"/> Corrosion,                                    | [Y]   | [N] ✓ |
| Type: <u>NOT APPLICABLE</u>  |       |       |
| <input type="checkbox"/> Saver-pit over flow,                          | [Y]   | [N] ✓ |
| <input type="checkbox"/> Surge vessel overflow,                        | [Y]   | [N] ✓ |
| <input type="checkbox"/> Outward dent                                  | [Y]   | [N] ✓ |
| <input type="checkbox"/> Others (specify). <u>NOT APPLICABLE</u>       | [Y]   | [N] ✓ |

AFTER JOINT  
 INVESTIGATION OF  
 THE INCIDENT,  
 SPILL WAS FOUND  
 TO BE DUE TO  
 THIRD PARTY  
 INTERFERENCE.

e. Spill point coordinates

Northing: (MINNA NOD - BEIT) Easting:

136275 25m 478618.86m



No. 1690

C. RISK/DAMAGE ASSESSMENT

7. Type of environment of spill site:

- Land
- Swamp
- water

Type of environment of which oil has spread:

- Land
- Swamp
- water

8. Distance from the nearest sensitive habitat

- Government reserved and designated protected area
- Drinking water source
- Built up area
- Farmlands
- Fish Farm/Pond
- Fishing net
- Others (specify).

[ ,m]  
 [ ,m]  
 [ ,m]  
 [ ,m]  
 [ ,m]  
 [ ,m]  
 [ ,m] } NOT APPLICABLE

9. Containment measures put in place;

- Booms
- Trench
- Dyke

[Y] [N] ✓  
 [Y] ✓ [N]  
 [Y] [N] ✓

Others: NOT APPLICABLE

10. Any pictures or video coverage?

[Y] ✓ [N]

11. Was there any disruption to the investigation?

[Y] [N] ✓

If yes give brief description:

NOT APPLICABLE

D. TYPE/NUMBERS OF PROPERTIES, IF ANY, FOUND WITHIN THE AREA OF SPREAD OF OIL

A. Structures / Properties

S/N	Type of Structures	Description	Size	Number	Comments
	NONE WITHIN AREA OF IMPACT				



No. 1690

B. Crops/Economic Trees

S/N	Types of crops	Young	Medium	Matured	Quantity	Comments	
	NONE	WITHIN AREA OF IMPACT					

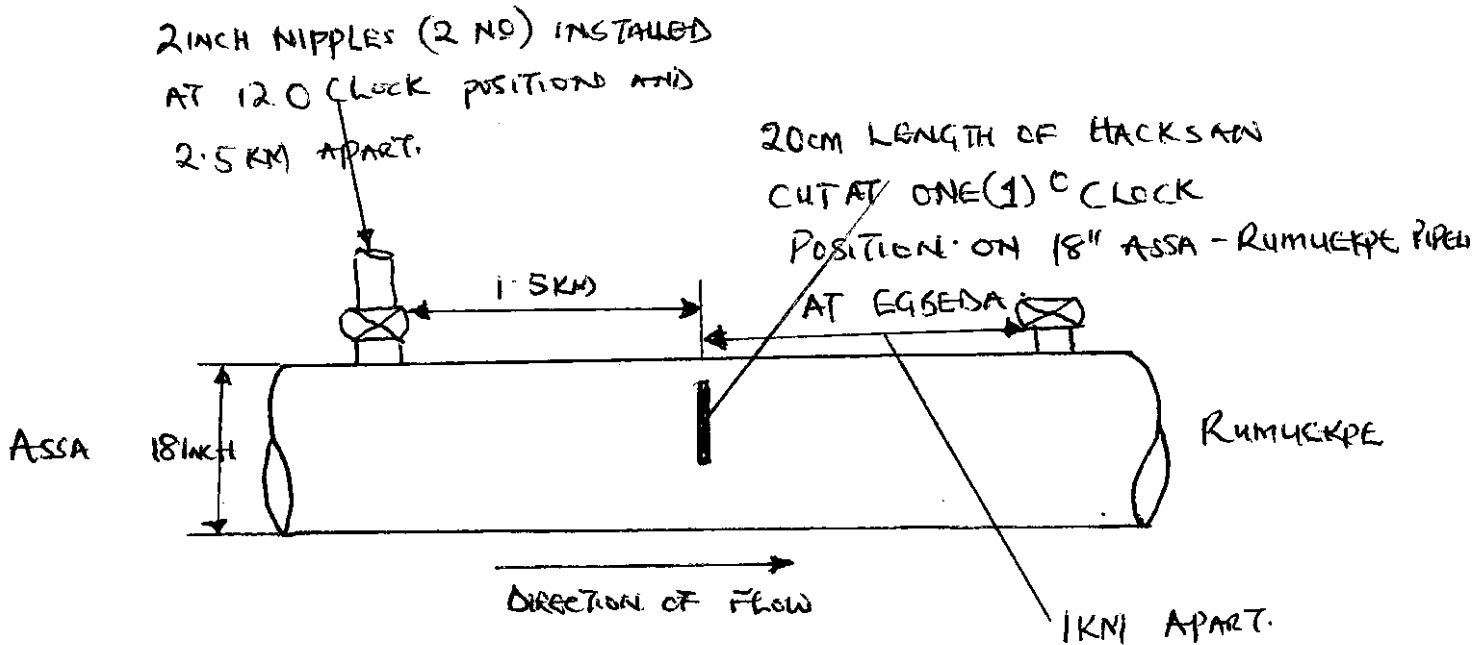
C. Fish/Nets/Ponds

S/N	Fish/Nets/Ponds	Description	Quantity/Size	Comments
	NONE	WITHIN AREA OF IMPACT		

D. Others (Specify) i.e. Animal Traps

S/N	Others	Description	Quantity/Size	Comments
	NONE	WITHIN AREA OF IMPACT		

E. GRAPHIC DESCRIPTION OF LEAK POINT (Details should be contained in leak repair report)





No 01690

F: TABLE SHOWING SOME OF COORDINATES TAKEN DURING JIV FOR AREA CALCULATION

E. Coordinates (MINNA MID-BETT)

S/N	Northing METER	Easting meter
1	136272.17 m	478618.85 m
2	136275.26 m	478612.70 m
3	136312.11 m	478622.04 m
4	136305.94 m	478631.27 m



No. 1690

**G. INCIDENT INFORMATION:**

**17 Impacted Area Details**

- a. Total calculated area of impact 0.03 HA
- Impact within SPDC R.O.W 0.03 HA
  - Impact outside R.O.W NIL

**18 Volume of oil recovered before completion of JIV ( $V_{rec}$ ):**

Recovered oil $V_{rec}$ :	<u>NIL</u>	barrels
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**19. Computation of the residual volume on site**

a. Computation of the volume of pooled free phase oil (on land or confined water body).

- i. Area ( $m^2$ ) occupied by pool of free phase oil 45  $m^2$
- ii. Average Depth (m) of pool of free phase oil 0.012 m
- iii.

Volume of pooled of free phase oil $V_{pool}$ :	<u>3.40</u>	barrels
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iv.

b. Computation of volume of infiltrated oil in the soil ( $V_3$ ).

- i. Area ( $m^2$ ) covered by the oil: 250  $m^2$
- ii. Average Depth (m) below ground surface of infiltration of oil: 0.0028 m
- iii. Soil type: CLAY
- iv.  $p_e$  (effective porosity of the soil): 8%
- v.

	<u>0.35</u>	barrels
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**20. Computation of volume of oil on open water based on standard coloration.**

	Thickness (mm)	Percentage coverage	Volume (m3)
Barely Visible	0.00004		
Silvery	0.00008		
Slight Colour	0.00015		
Bright Colour	0.0003		
Dull	0.001		
Dark	0.002		
Black oil	0.1		
Emulsion (30% Oil)	1		
	Percent Total	100%	Total Volume

NOT APPLICABLE

<u>NIL</u>	bbbl
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Spill Factors from USCG FOG (2000 Edition)



Volume of oil on open water - $V_{wat}$	NIL	barrels
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21. Calculation of evaporated volume:

- i. Oil type: BONNY LIGHT
- ii. E-Factor: 25%
- iii.

Volume of evaporated oil - $V_{ev}$	1.25	barrels
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Oil Type		Bonny Light	Bonny Medium
		E-Factor	E-Factor
Period Since Oil Spill	<1 day	10%	5%
	1-7 days	25%	15%
	>7 days	40%	25%

9. Gross Total Estimated Spilled Volume  $V_{Est}(bbls) = V_{vap}(bbls) + V_{wat}(bbls) + V_{inf}(bbls) + V_{pool}(bbls) + V_{recJ}(bbls)$

$V_{Est}(bbls) = 1.25 + 0.35 + 3.40 = 5 \text{ BARRELS}$

10. Net Total Estimated Spilled Volume  $V_{Est}(bbls) = V_{vap}(bbls) + 0.6 * V_{wat}(bbls) + V_{inf}(bbls) + V_{pool}(bbls) + V_{recJ}(bbls)$

$V_{Est}(bbls) = 5 \text{ BARRELS}$

\*Calculation of the respective estimated volume is to done using the new spill estimation software on site  
 \*Conversion of m3 to barrel is Total volume VT (m3) x6.29  
 \*Emulsification factor for spill on water to consider is 60% of volume of oil.

This report was filled and signed on the 08 / 05 / 20 11 at incident site by joint investigation representative from

- Host Community
- Department of Petroleum Resources [DPR]:
- National Oil Spill Detection and Response Agency [NOSDRA]:
- State Ministry of Environment [SME]:
- Nigeria Police Force [NPF]:
- Shell Petroleum Development Company [SPDC]:

*Tick as applicable*