

THE SHELL PETROLEUM DEVELOPMENT COMPANY OF NIGERIA LIMITED

JOINT INVESTIGATION REPORT FOR INCIDENT NO: 727743

(Note: As practicable as possible the JIT report is to be signed in the field by all the participating parties)

A. GENERAL INFORMATION:

1. Spill incident Number: 727743 2. Type of incident* SPILL
 3. Name of Location 20" BUGUMA - ALAKIRI PIPELINE
 4. Name of nearest community BAKANA 5. State: RIVERS 6. LGA DEGEMA
 7. Type of Production facility/Installation ON PIPELINE 8. Asset owner/District NECP

B. INCIDENT INFORMATION:

9. Details of incident

- a. Date of incident: 16TH OCTOBER 2011
 b. Date/Period of investigation: 21ST TO 23RD OCTOBER 2011

c. Description of spill point environment

- Firmed soil Loose soil Previously excavated area
 Under water Swampy Exposed pipe surface
 Well Platform (on Water) Rig

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

- Drilled hole Hack saw cut Explosive tear,
 Complete Rupture Inward dent, Well head tampering
 Failed Weld-on illegal hot tap valve, Missing Pipeline/Flowline)
 Crude oil theft (illegal bunkering) point, Third party tampering with Clamp
 Third party tampering with valve setting, Third party tampering with flange,
 External Corrosion Internal Corrosion
 Saver-pit over flow, Surge vessel overflow, Outward dent
 Flare System/Bund wall Failure Valve Failure com unit failure
 Cold vent Relief valve failure Others (specify) PUNCTURED HOLE

e. Incident due to:

- Third party interference Operational Others (specify _____)

f. Spill point coordinates

Measuring unit		<u>MINNA MID BELT</u>	
Northing:		Easting:	
<u>81138.12 mN</u>		<u>499445.09 mE</u>	

*This can be: a) Oil Spill b) Drilling fluid/Chemical c) Siltation d) construction e) Encroachment f) Fire,

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C. RISK ASSESSMENT

10. Type of environment:

- Land Swamp Water Seasonal swamp

i. Type of environment to which oil has spread:

- Land Swamp Water River (identify) _____

ii. Weather condition

- Raining Sunny

11. Distance from the nearest sensitive habitat

- Government reserved and designated protected area [Nil,m]
 Drinking water source [Nil,m]
 Built up area [Nil,m]
 Farmlands [Nil,m]
 Fish Farm/Pond [Nil,m]
 Fishing net [Nil,m]
 Others (specify). [Nil,m]
- NOT APPLICABLE**

12. Containment measures put in place;

- Booms Trench Dyke

Others: _____

13. Any pictures or video coverage? [Y] [N]

14. Was there any disruption to the investigation? [Y] [N]

If yes give brief description:

THE INCIDENT INVESTIGATION WAS DELAYED 21ST AND 22ND OCTOBER, 2011 DUE TO HIGH TIDE.

ON 23RD OCTOBER, 2011 THE TIDE WAS LOW, THE PIPE WAS EXPOSED, THE CAUSE OF SPILL SEEN

BUT THE COMMUNITY REPRESENTATIVES DISAGREED WITH THE CAUSE OF SPILL AND TOLD THE INCIDENT INVESTIGATION TEAM TO LEAVE THE SITE. NO IMPACT

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

15. Structures / Properties

S/N	Type of Structures	Description	Size	Number	Comments

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16. Crops/Economic Trees

S/N	Type of crops	Young	Medium	Matured	Quantity	Comments

17. Fish/Nets/Ponds

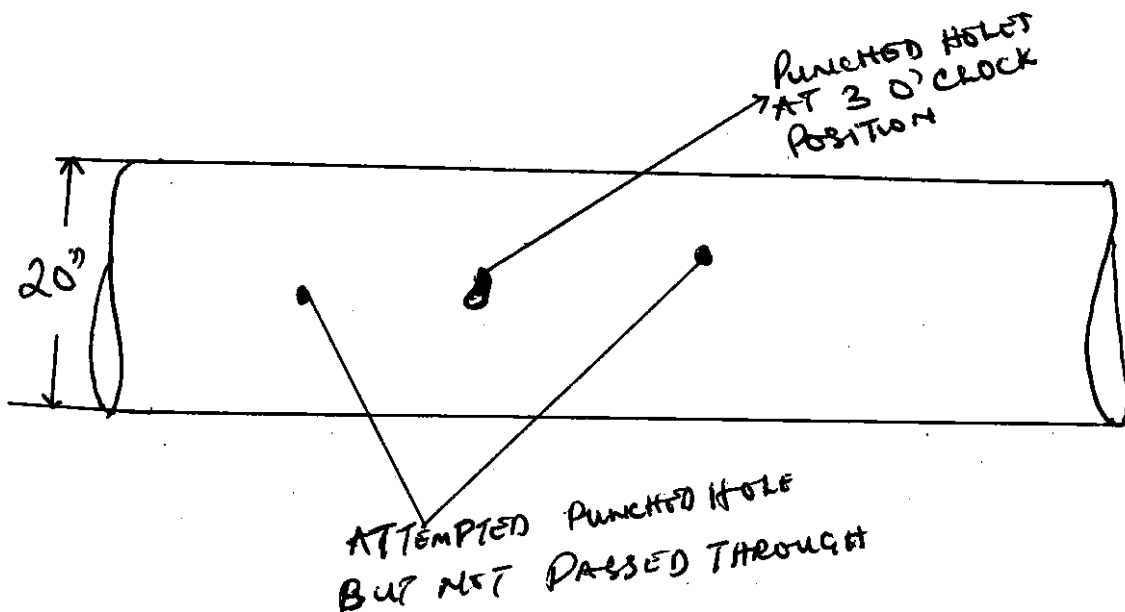
S/N	Fish/Nets/Ponds	Description	Quantity/Size	Comments

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

S/N	Others	Description	Quantity/Size	Comments

E. GRAPHIC DESCRIPTION OF LEAK POINT (Overview sketch of the site should be added as an appendix 1)

A SECTION OF 20" BUSUMA-ALAKIRI PIPELINE AT BAKANA
SHOWING PUNCHED HOLE AT 3 O'CLOCK POSITION





Before plugging



After plugging

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b. Computation of volume of infiltrated oil in the soil (V_{inf}).

- i. Area (m^2) covered by the oil: NO IMPACT ASSESSMENT
- ii. Area of the pool of free phase oil in touch with soil: WAS DONE DUE TO
- iii. Average Depth (m) below ground surface of infiltration of oil: COMMUNITY
- iv. Soil type: DISTURBANCE
- v. P_e (effective porosity of the soil): _____

iv. Volume of infiltrated oil, V_{inf}		barrels
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21. Computation of volume of oil on open water based on standard coloration.

- i. Total area of oil on open water: _____
- ii. Table of average depth of oil on water based on coloration *

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

iii. Volume of oil on open water, V_{wat}		barrels
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22. Calculation of evaporated volume:

- i. Oil type: _____
- ii. E-Factor: _____

iii. Volume of evaporated oil, V_{evap}		barrels
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Evaporation Factors (E-Factor) for SPDC Crude oil			
Oil Type	Days on site	Bonny Light	Bonny Medium
Period Since Oil Spill	< 1 day	10%	5%
	1-7 days	25%	15%
	> 7 days	40%	25%

23. Gross Total Estimated Spilled Volume $V_{Est}(bbls) = V_{evap}(bbls) + V_{wat}(bbls) + V_{inf}(bbls) + V_{pool}(bbls) + V_{rec}(bbls)$

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V_{Est}(bbls)=

24. Net Total Estimated Spilled Volume $V_{Est}(bbls) = V_{evap}(bbls) + 0.6 * V_{wat}(bbls) + V_{inf}(bbls) + V_{pool}(bbls) + V_{rej}(bbls)$

VEst(bbls)=

*Calculation of the respective estimated volume is to be done using the new spill estimation software on site

*Conversion of m3 to barrels is Total volume VT (m3) x 6.29

*Emulsification factor for spill on water to consider is 60% of volume of oil.

25. GENERAL STATUS OF THE SITE

A. Joint investigation of the incident site found that there is no residual impact After the initial response and therefore recommend that the site be closed out

B. Investigation of the incident site showed that there is residual impact on site requiring further works

26 Signatories

This report was filled and signed on the 23 / 10 / 20 11 at incident site by joint investigation representatives 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

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20. Appendix 1: Overview sketch of the site

Location : 20" BUGUMA - ALAKIRI PIPELINE AT BAKANA



23/10/2011 09:55 AM

