

JOINT INVESTIGATION REPORT

INCIDENT NO: 1718583 JIV report S/N: Nº 0000197

(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: 1718583 2. Type of incident* OIL SPILL/FIRE
3. Name of Location 28" NKPOKU - BOMU PIPELINE
4. Name of nearest community G10 5. State: RIVERS 6. LGA TAI
7. Type of Production facility/Installation OIL PIPELINE
8. Asset owner/District THE SHELL PETROLEUM DEVELOPMENT COMPANY OF NIGERIA LTD (SPDC) / PIPELINE

B. INCIDENT INFORMATION:

9. Details of incident
a. Date of incident: 25TH SEPTEMBER, 2016
b. Start date/time of investigation: 30TH SEPTEMBER, 2016/1230HRS
c. Investigation End date: 1ST OCTOBER 2016 Actual investigation duration, days: TWO (2) DAYS
d. Description of spill point environment

- | | | |
|--|--|---|
| <input type="checkbox"/> Firm soil | <input checked="" type="checkbox"/> Loose soil | <input checked="" type="checkbox"/> Recently excavated area |
| <input type="checkbox"/> Under water | <input type="checkbox"/> Swampy | <input type="checkbox"/> Exposed pipe surface |
| <input type="checkbox"/> Well Platform (on Water | <input type="checkbox"/> Drill Rig | |

Additional observations around the spill point: THE JOINT INVESTIGATION TEAM OBSERVED AN INWARD DENT AND A TEAR AT 7 O'CLOCK POSITION. THE TEAM ALSO OBSERVED BURNT AREA.

e. Description of leak point (tick as applicable):

- | | | |
|---|--|--|
| <input type="checkbox"/> Drilled hole | <input type="checkbox"/> Hack saw cut | <input checked="" type="checkbox"/> Tear (<u>EXPLOSIVE TEAR</u>). |
| <input type="checkbox"/> Complete Rupture | <input checked="" type="checkbox"/> Inward dent, | <input type="checkbox"/> Well head tampering |
| <input type="checkbox"/> Failed Weld-on illegal hot tap valve | <input type="checkbox"/> Failed Clamp, | <input type="checkbox"/> Missing Pipeline/Flowline |
| <input type="checkbox"/> Crude oil theft (illegal bunkering) point, | <input type="checkbox"/> Saver-pit over flow | <input type="checkbox"/> Third party tampering with Clamp |
| <input type="checkbox"/> Third party tampering with valve setting | <input type="checkbox"/> Bulging Outward | <input type="checkbox"/> Third party tampering with flange. |
| <input type="checkbox"/> Flare System/Bund wall failure | <input type="checkbox"/> Cold vent | <input type="checkbox"/> Surge vessel overflow, |
| <input type="checkbox"/> Valve Failure | <input type="checkbox"/> Relief valve failure | <input type="checkbox"/> Accidental 3 rd party equipment impact |
| <input type="checkbox"/> Others(specify) _____ | | |

f. Incident caused by:

- Third party interference (Sabotage crude theft ; Line theft ; Accidental 3rd party damage
 Operational Others (including Mystery spills) _____

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

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g. Spill point coordinates

h. Measuring unit

Northing:	Easting:
4.70283	7.24263

C. RISK ASSESSMENT

10. Type of environment:

Land Swamp Water Seasonal swamp Shoreline/Waterfront

i. Type of environment to which oil has spread:

Land Swamp Water River (identify) _____

ii. Weather condition

Rain Sunny Dry Wet Windy Hot Cool

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 [50 ,m]
 Fish Farm/Pond [NIL ,m]
 Fishing net [NIL ,m]
 Others (specify).

12. Containment measures put in place;

Booms Trench Dyke Natural depression Pit None

Others: _____

13. Any pictures or video coverage?

[N]

14. Further response/repair initiated as at the time of JIV?

[N]

If yes to item 14, give brief description:

REPAIR BY SECTIONAL REPLACEMENT

15. Was there any disruption to the investigation?

[Y]

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If yes to item 15 give brief description:

NOT APPLICABLE

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

16. Structures / Properties

S/N	Type of Structures	Description	Size	Number	Comments
1	GUARD HUTS			2	BURNT

17. Crops/Economic Trees

S/N	Type of crops	Young	Medium	Matured	Quantity	Comments
1	CASSAVA		MANY	MANY		BURNT
2	PALM TREE					BURNT

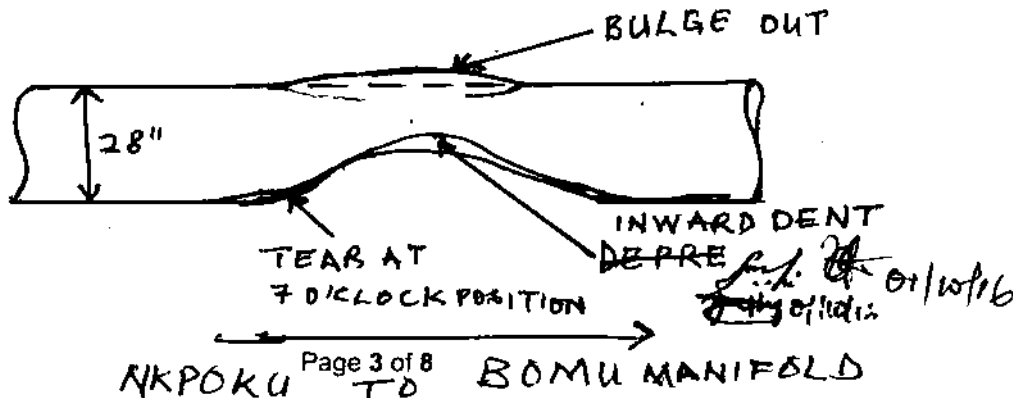
18. Fishing Nets/Fish Ponds

S/N	Nets/Ponds	Description	Quantity/Size	Comments
	<u>NONE WITHIN AREA OF IMPACT</u>			

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

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

E. GRAPHIC DESCRIPTION OF LEAK POINT (while detail report of the leak point should be contained in the leak report, overview sketch of the site should be added as an appendix 1) A SECTION 28" NKPOKU -BOMMU PIPELINE AT GID SHOWING INWARD DENT AND A TEAR AT 7 O'CLOCK POSITION.



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

20. Impacted area boundary Coordinates (*If more, Print and attach as an appendix*)

S/N	Northing	Easting

ATTACHED

[Signature]

01/10/2016


28" NKPOKU - BOMU PIPELINE AT GIO SPILL/FIRE SITE COORDINATES.

INC. NO: 1718583	WGS 84	
POINT	LATITUDE	LONGITUDE
wp534	4.70363	7.24148
wp538	4.70355	7.24184
wp539	4.70334	7.24209
wp540	4.70314	7.24264
wp541	4.70299	7.24302
wp542	4.70249	7.24334
wp543	4.70221	7.24348
wp544	4.70163	7.24396
wp545	4.70112	7.24462
wp546	4.70103	7.24501
wp547	4.70084	7.24525
wp548	4.70032	7.24591
wp549	4.69997	7.24625
wp550	4.69975	7.24629
wp501	4.69967	7.24617
wp502	4.69971	7.24605
wp503	4.69949	7.24596
wp504	4.69936	7.24634
wp505	4.69915	7.2461
wp506	4.69906	7.24613
wp507	4.6987	7.24609
wp508	4.69799	7.2456
wp509	4.69815	7.24545
wp510	4.69815	7.24539
wp511	4.6982	7.24536
wp512	4.69834	7.24532
wp513	4.69894	7.24593
wp514	4.69931	7.24575
wp515	4.69939	7.24581
wp516	4.69949	7.24574
wp517	4.69953	7.24578
wp518	4.69958	7.24575
wp519	4.69972	7.24593
wp520	4.70078	7.24472
wp521	4.70116	7.24422
wp522	4.70082	7.24422
wp523	4.70077	7.24437
wp524	4.70071	7.24432
wp525	4.70046	7.24438
wp526	4.7004	7.24413
wp527	4.70066	7.24414
wp528	4.70089	7.24402
wp529	4.70124	7.24416
wp530	4.70156	7.24378

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28" NKPOKU - BOMU PIPELINE AT GIO SPILL/FIRE SITE COORDINATES.

INC. NO: 1718583	WGS 84	
POINT	LATITUDE	LONGITUDE
wp531	4.70215	7.24304
wp532	4.70315	7.24181
wp533	4.70347	7.24149

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G. INCIDENT INFORMATION:

a. Impacted Area Details

- Total calculated area of impact 3.57 Ha
- Impact within R.O.W YES
- Impact outside R.O.W YES

b. Volume of oil recovered before completion of JIV (V_{rec}):

Recovered oil V_{rec} :	113	Barrels
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Controlled recovery/evacuation from source with no impact to environment:

NIL	Barrels
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c. Net Estimated Spilled Volume V_{est} (bbls)* =

	361.75 BARRELS
Estimated Reported Volume** V_{rep} (bbls) =	362 BARRELS

*Notes:

- Volume estimation was done using an excel based tool. (see attached for details on the calculation)
- Reported spilled volume is an estimate

Write other relevant notes taken into consideration for estimating the spilled in the box below:

/

Calculation of the respective estimated volume is to be done on site as far as practicable using the new spill volume estimation software on site; Conversion of m^3 to barrels is Volume (m³) x 6.29; **Round up estimated volume to next whole number using the following rules:

- Any spill volume in excess of 1 bbl is rounded up to the next whole number.
- Any spill volume in less than 1 bbl is rounded up to the next 0.1 bbl.

Examples: Calculated volume = 15.3 bbl ----- Reported volume = 16 bbl
 Calculated volume = 0.35 bbl ----- Reported volume = 0.4 bbl
 Calculated volume = 0.01 bbl ----- Reported volume = 0.1 bbl

Wherever this estimation tool is not applicable please refer to paragraph 6c (Deviations) of the JIV procedure to use appropriate steps for volume estimation, record the calculation on a plain sheet of paper and attach to the JIV report.

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d. General Status of the site

i. Joint investigation of the incident site found that there is no residual impact after the initial response and JIT therefore recommend that the site be closed out <input type="checkbox"/>
ii. Investigation of the incident site showed that there is residual impact on site requiring further works <input checked="" type="checkbox"/>

e. Representatives

<p>This report was filled, agreed and signed by the following joint investigation team representatives:</p> <ul style="list-style-type: none">• Host Community: <input checked="" type="checkbox"/>• Department of Petroleum Resources [DPR]: <input checked="" type="checkbox"/>• National Oil Spill Detection and Response Agency [NOSDRA]: <input checked="" type="checkbox"/>• State Ministry of Environment [SME]: <input checked="" type="checkbox"/>• Asset Owner: <input checked="" type="checkbox"/>• Signatories agree with reported findings: <input checked="" type="checkbox"/>• Separate DPR form has been filled out with same findings: <input checked="" type="checkbox"/> <p style="text-align: right;"><i>Tick as applicable</i></p>
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f. Appendix 1: Overview sketch of the site

