

THE SHELL PETROLEUM DEVELOPMENT COMPANY OF NIGERIA LIMITED.

JOINT INVESTIGATION REPORT FOR INCIDENT NO: 1394890 JIV report S/N: 00643

(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: 1394890 2. Type of incident* OIL SPILL
 3. Name of Location 20" OPUKUSHI - BRASS CREEK PIPELINE
 4. Name of nearest community TAMOGBENE 5. State: BAYELSA 6. LGA EKEREMOR
 7. Type of Production facility/Installation OIL PIPELINE 8. Asset owner/District PIPELINES

B. INCIDENT INFORMATION:

9. Details of incident
 a. Date of incident: 1ST MAY, 2015
 b. Start date/time of investigation: 15TH MAY, 2015 AT 1615HRS
 c. Investigation End date: 15TH MAY, 2015 Actual investigation duration, days: 1 DAY
 d. Description of spill point environment

- | | | |
|---|--|--|
| <input type="checkbox"/> Firmed soil | <input type="checkbox"/> Loose soil | <input type="checkbox"/> Recently excavated area |
| <input type="checkbox"/> Under water | <input checked="" 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: ON EXCAVATION, A 4" ILLEGAL HOT TAP VALVE WAS SEEN WELDED ON THE 20" OPUKUSHI - BRASS CREEK PIPELINE AT 12 O'CLOCK POSITION AND IT WAS NOT LEAKING AT THE POINT OF ATTACHMENT TO THE 20" CRUDE OIL PIPELINE. THOUGH, THERE WAS OIL SHEEN ON SURFACE WATER WITHIN SPDC RIGHT OF WAY DUE TO DISCONNECTED ILLEGAL FLOWLINE.

- e. Description of leak point (tick as applicable);
- | | | |
|--|--|---|
| <input type="checkbox"/> Drilled hole | <input type="checkbox"/> Hack saw cut | <input type="checkbox"/> Tear (_____). |
| <input type="checkbox"/> Complete Rupture | <input 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 checked="" type="checkbox"/> Crude oil theft (illegal bunkering) point, | | <input type="checkbox"/> Third party tampering with Clamp |
| <input type="checkbox"/> Third party tampering with valve setting, | | <input type="checkbox"/> Third party tampering with flange, |
| <input type="checkbox"/> Corrosion | <input type="checkbox"/> Saver-pit over flow, | <input type="checkbox"/> Surge vessel overflow, |
| <input type="checkbox"/> Bulging Outward | <input type="checkbox"/> Flare System/Bund wall failure | <input type="checkbox"/> Accidental 3 rd party equipment |
| impact | <input type="checkbox"/> Valve Failure | <input type="checkbox"/> com unit failure |
| <input type="checkbox"/> Relief valve failure | <input checked="" type="checkbox"/> Others (specify) <u>4" WELD - ON ILLEGAL HOT-TAP VALVE</u> | <input type="checkbox"/> Cold vent |
- AT 12 O' clock POSITION
- 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

Measuring unit	
Northings: <u>CLATITUDE</u>	Easting: <u>(LONGITUDE)</u>
<u>4.94191</u>	<u>5.68705</u>
<u>[Signature]</u>	<u>[Signature]</u>

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 [,m]
 - Drinking water source [,m]
 - Built up area [,m]
 - Farmlands [,m]
 - Fish Farm/Pond [,m]
 - Fishing net [,m]
 - Others (specify). [,m]
- } NONE WITHIN THE VICINITY

12. Containment measures put in place;

- Booms Trench Dyke Natural depression Pit None
 Others: COFFER - DAM

13. Any pictures or video coverage?

[N]

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

[Y]

If yes to item 14, give brief description: REPAIR IS BEING PLANNED BY THE PIPELINES MAINTENANCE TEAM.

15. Was there any disruption to the investigation?

[Y]

If yes to item 15 give brief description: NOT APPLICABLE

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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
	NONE WITHIN AREA OF IMPACT				

17. Crops/Economic Trees

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

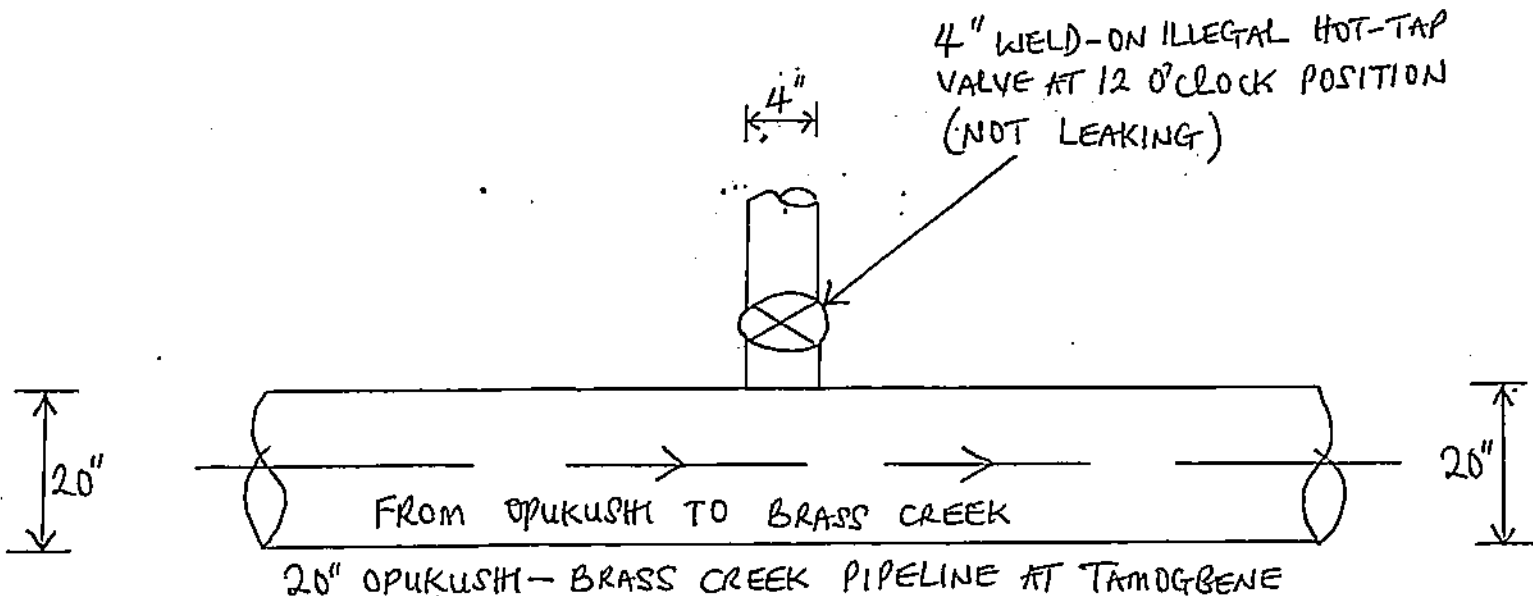
18. Fish/Nets/Ponds

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

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

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

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)



20" OPUKUSHI - BRASS CREEK PIPELINE AT TAMDBENE

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G. INCIDENT INFORMATION:

20. Impacted Area Details

- Total calculated area of impact 0.015 Ha
- Impact within SPDC R.O.W YES
- Impact outside SPDC R.O.W NO

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

Recovered Oil V_{rec}	<u>0.31</u>	Barrels
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Controlled recovery/evacuation from source with no impact to environment:

<u>NIL</u>	Barrels
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22. Net Estimated Spilled Volume V_{est} (bbbls) =	<u>0.52 BBL</u>
Estimated Reported Volume** V_{rep} (bbbls) =	<u>0.6 BBL</u>

*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 (m^3) 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 column estimation; record the calculation in a plain sheet of paper and attach to the JIV report.

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23. GENERAL STATUS OF THE SITE

A. 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"/>
B. Investigation of the incident site showed that there is residual impact on site requiring further works <input checked="" type="checkbox"/>

24. REPRESENTATIVES

This report was filled, agreed and signed by the following joint investigation representatives:

- 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]:
- Signatories agree with reported findings:
- Separate DPR form has been filled out with same findings

Tick as applicable

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25. Appendix 1: Overview sketch of the site

