

THE SHELL PETROLEUM DEVELOPMENT COMPANY OF NIGERIA LIMITED.

JOINT INVESTIGATION REPORT FOR INCIDENT NO: 1354025 JIV report S/N: 00861

(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: 1354025 2. Type of incident* OIL SPILL
 3. Name of Location ADIBAWA WELL LOS FLOWLINE
 4. Name of nearest community EDAGBERI BETTERLAND 5. State: RIVERS 6. LGA AHOADA-WEST
 7. Type of Production facility/Installation OIL FLOWLINE Asset owner/District LAND 2

B. INCIDENT INFORMATION:

9. Details of incident

- a. Date of incident: 5TH MARCH, 2015
 b. Start date/time of investigation: 10TH MARCH, 2015/13:30 HOURS
 c. Investigation End date: 10TH MARCH 2015 Actual investigation duration, days: ONE (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 type="checkbox"/> Swampy | <input checked="" type="checkbox"/> Exposed pipe surface |
| <input type="checkbox"/> Well Platform (on Water) | | <input type="checkbox"/> Drill Rig |

Additional observations around the spill point: **ON ARRIVAL AT SITE, THE JOINT INVESTIGATION TEAM OBSERVED THAT A CONCRETE SLAB THAT HAD BEEN CAST ON THE PREVIOUSLY INSTALLED CLAMP (CONFIRMED AS LEAK POINT) BY THE SPDC ASSET OWNER HAD BEEN DISPLACED OFF ITS POSITION AND WAS LYING ON THE GROUND. WHEN CHECKED, 3 CLAMP NUTS WERE OBSERVED LOOSE WHILE THE CLAMP SEALS WERE STILL INTACT.**

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 type="checkbox"/> Crude oil theft (illegal bunkering) point, | | <input checked="" 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 type="checkbox"/> Others (specify) _____ | <input type="checkbox"/> Cold vent |

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		<u>MINNA MID BELT</u>	
Northing: (m)		Easting: (m)	
<u>133300.41</u>		<u>450754.51</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): PALM TREES AND BANANA TREES WITH COCONUT IMPACTED BY SPILL

12. Containment measures put in place;

- Booms Trench Dyke Natural depression Pit None

Others: NO FREE-PHASE OIL OBSERVED ON SITE.

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 WAS DONE BY REMOVAL OF THE CLAMP THAT HAD LEAKED AND REPLACEMENT WITH A NEW ONE ON THE AFFECTED FLOWLINE SECTION.

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

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
1	PALM TREES			✓	4 NO.	WITHIN
2	BANANA	1 NO.		✓	5 NO.	SPALL-
3	COCO NUT	✓			3 NO.	IMPACTED REGION.

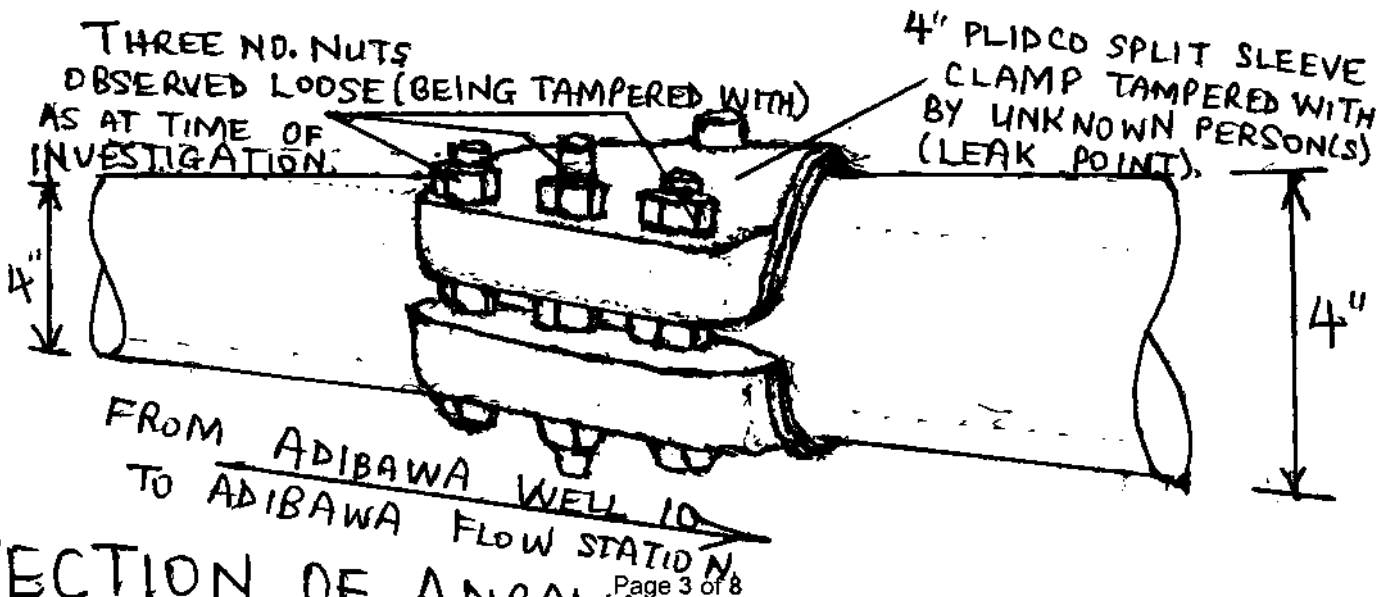
18. Fish/Nets/Ponds

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)



SECTION OF ADIBAWA WELL 10 S FLOWLINE AT EDAGBERI BETTERLAND SHOWING POSITION OF CLAMP TAMPERED WITH BY UNKNOWN PERSON(S).

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G. INCIDENT INFORMATION:

20. Impacted Area Details

- Total calculated area of impact 0.0078 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>NIL</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}(bbls)* =	<u>0.56</u>
Estimated Reported Volume** V_{rep}(bbls)=	<u>0.6 BARREL</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:

NOT APPLICABLE

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 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

