

JOINT INVESTIGATION REPORT

1399337

INCIDENT NO: 00011 JIV report S/N:

(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: 1399337 2. Type of incident* OIL SPILL
3. Name of Location NKALI WELL II WELL HEAD
4. Name of nearest community OKORONGU 5. State: RIVERS 6. LGA ETCHE
7. Type of Production facility/Installation WELL HEAD
8. Asset owner/District SHELL PETROLEUM DEVELOPMENT COMPANY OF (NIG) LTD.

B. INCIDENT INFORMATION:

9. Details of incident

- a. Date of incident: 12TH MAY 2015
b. Start date/time of investigation: 14TH MAY 2015 AND
c. Investigation End date: 16TH MAY 2015 Actual investigation duration, days: TWO DAYS
d. Description of spill point environment

- | | | |
|---|-------------------------------------|--|
| <input checked="" type="checkbox"/> Firm soil | <input type="checkbox"/> Loose soil | <input 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: JIV TEAM OBSERVED THE STOLEN XMAS TREE WAS REPLACED WITH A NEW ONE TO STOP THE SPILL.

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 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 checked="" type="checkbox"/> Others (specify) <u>STOLEN XMAS TREE BY UNKNOWN PERSON.</u> | | |

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

WGS 84

Northing:	Easting:
4.987830	7.082878

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 [84 ,m]
 Farmlands [30 ,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?

[Y] [N]

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

[Y] [N]

If yes to item 14, give brief description:

THE STOLEN XMAS TREE WAS REPLACED WITH A NEW ONE TO STOP THE SPILL

15. Was there any disruption to the investigation?

[Y] [N]

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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	RESIDENTIAL	houses	—	15	RIGHT IMPACT
1	HALL		—	1	DN ROOF.

17. Crops/Economic Trees

S/N	Type of crops	Young	Medium	Matured	Quantity	Comments
1	CORN	✓	—	✓		
2	CASSAVA	✓		✓		
3	MELON			✓		
4	PLANTAIN			✓		
5	COCO NUT			✓		

18. Fishing Nets/Fish Ponds

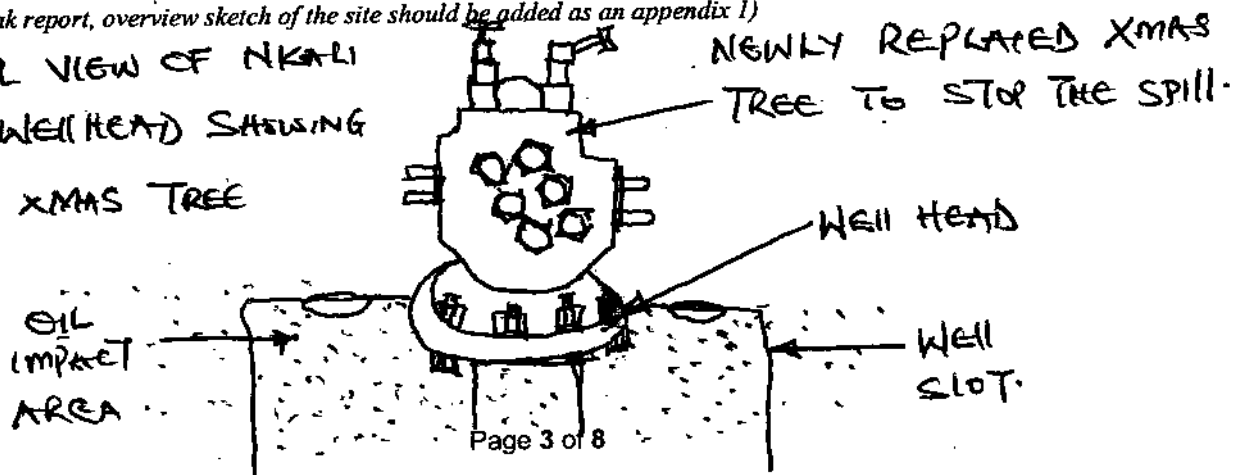
S/N	Nets/Ponds	Description	Quantity/Size	Comments
NONE WITHIN AREA OF IMPACT				

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)

SECTIONAL VIEW OF NKALI
WELL II WELL HEAD SHOWING
STOLEN XMAS TREE



LIST OF COORDINATES OF NKALI WELL 11 SPILL @ OKOROAGU, INC. NO=1399337
WGS 84

PTS	EAST	NORTH
439	7.082878	4.98783
445	7.08433	4.98741
446	7.08459	4.98744
447	7.08449	4.98758
448	7.0845	4.98768
449	7.08413	4.98862
450	7.08423	4.98904
451	7.08415	4.9893
452	7.08362	4.99006
453	7.08312	4.98988
454	7.08241	4.98995
455	7.08205	4.98985
456	7.08169	4.9899
457	7.08179	4.98907
458	7.0818	4.98895
459	7.08163	4.98857
460	7.08169	4.98824
440	7.08328	4.98844
462	7.08211	4.98728
463	7.08215	4.98673
464	7.08264	4.9868
465	7.08356	4.98703
466	7.08362	4.98737
469	7.08311	4.98754
470	7.08271	4.98749
471	7.08261	4.98789
472	7.08309	4.98789
473	7.08331	4.98857
474	7.08313	4.98937
475	7.08236	4.98879



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G. INCIDENT INFORMATION:

a. Impacted Area Details

- Total calculated area of impact LIGHT IMPACT = 4.19HA, SUPERFICIAL IMPACT = 4.4
- 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} :	<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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c. Net Estimated Spilled Volume V_{Est} (bbls)* =

49.97 BARRELS

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

50 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:

SOIL ON SITE IS ENGINEERED AND HIGHLY COMPACTED (WELL HEAD LOCATION) WITH VERY LOW EFFECTIVE POROSITY THEREFORE LIMITING INFILTRATION OF IMPACT ON SITE.

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) \times 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 in 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

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

- Host Community:
- Department of Petroleum Resources [DPR]:
- National Oil Spill Detection and Response Agency [NOSDRA]:
- State Ministry of Environment [SME]:
- Asset Owner:
- Signatories agree with reported findings:
- Separate DPR form has been filled out with same findings:

Tick as applicable

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f. Appendix 1: Overview sketch of the site

