

JOINT INVESTIGATION REPORT

INCIDENT NO: 1820177 JIV report S/N: Nº 0000257

(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: 1820177 2. Type of incident* OIL SPILL
3. Name of Location 6" IMO RIVER 3 WELL 37L FLOWLINE
4. Name of nearest community IGIRI-UKWU (DWAZA) 5. State: ABIA 6. LGA UKWA-WEST
7. Type of Production facility/Installation OIL FLOWLINE
8. Asset owner/District THE SHELL PETROLEUM DEVELOPMENT COMPANY OF NIGERIA LIMITED/LAND EAST HUB

B. INCIDENT INFORMATION:

9. Details of incident
a. Date of incident: 14TH MARCH, 2017
b. Start date/time of investigation: 21ST MARCH, 2017/12:49 HOURS
c. Investigation End date: 21ST MARCH, 2017 Actual investigation duration, days: ONE (1) DAY
d. Description of spill point environment

- Firm soil Loose soil Recently excavated area
 Under water Swampy Exposed pipe surface
 Well Platform (on Water) Drill Rig

Additional observations around the spill point: A DITCH WAS OBSERVED AROUND THE SPILL POINT AS AT TIME OF JOINT INVESTIGATION TEAM'S ARRIVAL AT SITE.

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

- Drilled hole Hack saw cut Tear (_____),
 Complete Rupture Inward dent, Well head tampering
 Failed Weld-on illegal hot tap valve Failed Clamp, Missing Pipeline/Flowline
 Crude oil theft (illegal bunkering) point, Saver-pit over flow Third party tampering with Clamp
 Third party tampering with valve setting Bulging Outward Third party tampering with flange,
 Flare System/Bund wall failure Cold vent Surge vessel overflow,
 Valve Failure Relief valve failure Accidental 3rd party equipment impact
 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) Situation d) construction e) Encroachment f) Fire.

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g. Spill point coordinates

h. Measuring unit

WGS 84

Northing:	Easting:
LATITUDE	LONGITUDE
4.99164	7.19517
6	6

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**

SUPERFICIALLY IMPACTED BY SPILL

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:

NOT APPLICABLE

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
<u>NONE WITHIN AREA OF IMPACT</u>					

17. Crops/Economic Trees

S/N	Type of crops	Young	Medium	Matured	Quantity	Comments
<u>1</u>	<u>PALM TREES</u>	<u>3</u>	<u>-</u>	<u>4</u>	<u>7 No.</u>	<u>SUPERFICIALLY IMPACTED BY SPILL.</u>

18. Fishing Nets/Fish Ponds

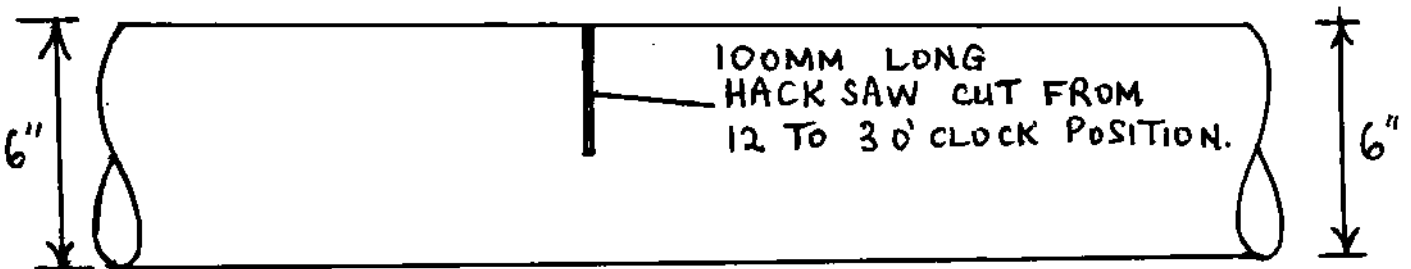
S/N	Nets/Ponds	Description	Quantity/Size	Comments
<u>NONE WITHIN AREA OF IMPACT</u>				

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)

SECTION OF 6" IMO RIVER 3 WELL 37 L FLOWLINE
AT IGIRI-UKWU (OWAZA) SHOWING POSITION OF
LEAK POINT (HACK SAW CUT).



FROM IMO RIVER 3 WELL 37
TO IMO RIVER 3 FLOW STATION →

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G. INCIDENT INFORMATION:

a. Impacted Area Details

- Total calculated area of impact 0.037Ha
- 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)* = 0.78

Estimated Reported Volume** V_{rep} (bbls) = 0.8 BARREL

*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 (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 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

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

