

JOINT INVESTIGATION REPORT

INCIDENT NO: 1558274 JIV report S/N: Nº 0000118

(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: 1558274 2. Type of incident* OIL SPILL
3. Name of Location KOLO CREEK WELL 3T FLOWLINE
4. Name of nearest community DTUASEGA 5. State: BAYELSA 6. LGA OGBIA
7. Type of Production facility/Installation OIL FLOWLINE
8. Asset owner/District THE SHELL PETROLEUM DEVELOPMENT COMPANY OF NIGERIA LIMITED/ LAND 2

B. INCIDENT INFORMATION:

9. Details of incident

- a. Date of incident: 15TH JANUARY, 2016
b. Start date/time of investigation: 19TH JANUARY, 2016/14:12 HOURS
c. Investigation End date: 19TH JANUARY, 2016 Actual investigation duration, days: ONE(1) DAY
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 checked="" type="checkbox"/> Exposed pipe surface |
| <input type="checkbox"/> Well Platform (on Water) | <input type="checkbox"/> DrillRig | |

Additional observations around the spill point: **THE JOINT INVESTIGATION TEAM OBSERVED A TOTAL OF 4 NO. HACK SAW CUTS (SPILL POINTS) ON SITE. 2 HACK SAW CUT LOCATIONS EACH HAD A SMALL PIT DUG BY UNKNOWN PERSON(S) AROUND THEM. THE OTHER 2 HACK SAW CUTS WERE OBSERVED ON THE EXPOSED FLOWLINE SECTION EMANATING FROM THE WELL, 3T. OIL STAINS WERE NOTICED ON VEGETATION.**

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

- | | | |
|---|--|--|
| <input type="checkbox"/> Drilled hole | <input checked="" 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 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) Situation d) construction e) Encroachment f) Fire.

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g. Spill point coordinates

h. Measuring unit

WGS 84

SP 1 & 2
SP 3
SP 4

Northing: LATITUDE	Easting: LONGITUDE
04.89152	006.36179
04.89183	006.36192
04.89172	006.36192
1.8	1.8

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): **PLANTAIN TREES** [.m]

IMPACTED BY SPILL.

12. Containment measures put in place:

- Booms
 Trench
 Dyke
 Natural depression
 Pit
 None

Others: **NOT APPLICABLE (NO FREE PHASE OIL OBSERVED ON SITE).**

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
NONE WITHIN AREA OF IMPACT					

17. Crops/Economic Trees

S/N	Type of crops	Young	Medium	Matured	Quantity	Comments
1	PLANTAIN TREES	2 No.	3 No.	2 No.	7 No.	SUPERFICIALLY IMPACTED BY SPILL

18. Fishing Nets/Fish Ponds

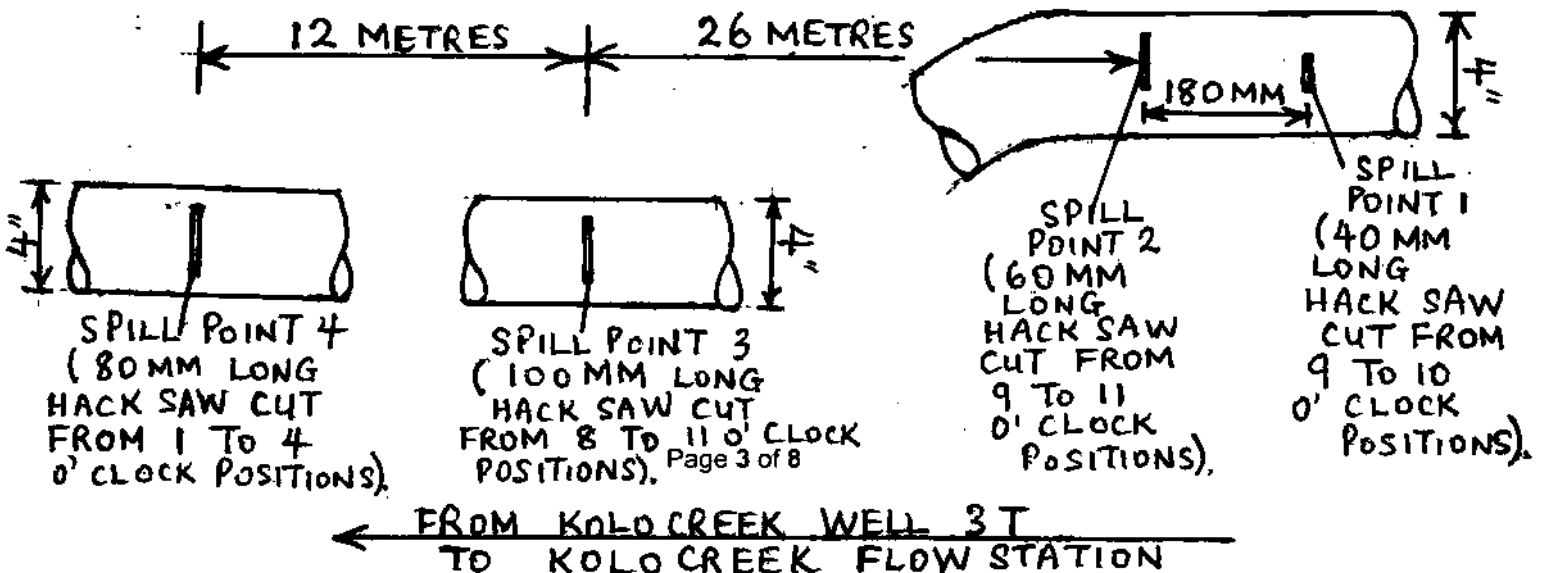
S/N	Nets/Ponds	Description	Quantity/Size	Comments
NONE WITHIN AREA OF IMPACT				

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)

SECTIONS OF KOLO CREEK WELL 3T FLOWLINE AT OTUASEGA SHOWING POSITIONS OF 4 NO. HACK SAW CUTS (LEAK POINTS).



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G. INCIDENT INFORMATION:

a. Impacted Area Details

- Total calculated area of impact 0.015 Ha (AREA A: 0.009416 Ha
AREA B: 0.00826 Ha
AREA C: 0.004308 Ha)
- Impact within R.O.W YES
- Impact outside R.O.W NO

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

Recovered oil $V_{rec.}$:	NIL	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)* = 0.12

Estimated Reported Volume V_{rep} (bbls) = 0.2 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) 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 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

<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

