

JOINT INVESTIGATION REPORT

INCIDENT NO: 2970146 JIV report S/N: 0000814

(Note: As practicable as possible the JIT report is to be signed in the field by all the participating parties)

A. GENERAL INFORMATION:

1. Fountain Incident Number: 2970146 2. Type of incident* OIL SPILL
3. Name of Location ASATITON WELL 1 LIMA FLOWLINE
OPUKUSHI
4. Name of nearest community AZAGBERE 5. State: BAVELSA 6. LGA SOUTHERN IJAW
7. Production Facility/Installation FLOWLINE
8. Asset Owner/Hub THE SHELL PETROLEUM DEVELOPMENT COMPANY NIGERIA LIMITED / SWAMP WEST

B. INCIDENT INFORMATION:

9. Details of incident

- a. Date Reported: 12TH JUNE, 2021
b. Start date/time of Investigation: 23RD JUNE, 2021 AT 2:42PM
c. Investigation End date: 23RD JUNE, 2021 Day(s) on site: ONE (1) DAY
d. Description of spill point environment

- | | | |
|---|-------------------------------------|--|
| <input 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 checked="" type="checkbox"/> Exposed pipe surface |
| <input type="checkbox"/> Well Platform (on water) | <input type="checkbox"/> Drill Rig | <input type="checkbox"/> Sand bag(s) |

Additional observations around the spill point:

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

- | | | |
|---|---|--|
| <input type="checkbox"/> Smooth round-edge hole | <input type="checkbox"/> Rough-edge hole | <input checked="" type="checkbox"/> Hack saw cut |
| <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"/> Tear (_____) | | |
| <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) Siltation (d) Water Leak (e) Fire (f) Non-leaking theft point removal

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g. Spill Point Coordinates (*Incidents $\leq 100m$ apart to be aggregated into one Joint Investigation Report)

h. Measuring unit

WGS(84)

| | |
|---|---|
| Northing: <u>LATITUDE</u> | Easting: <u>LONGITUDE</u> |
| <u>4.876429</u> | <u>5.858452</u> |

C. RISK ASSESSMENT

10. Details of Environment

i. Type of environment where spill occurred (select one):

- Land
 Swamp
 Water
 Seasonal swamp
 Shoreline/Waterfront

ii. Type of environment to which oil has spread:

- Land
 Swamp
 Waterbody (specify) _____

iii. Weather condition

- Dry
 Wet
 Windy
 Hot

11. Distance to Sensitive habitat within 100m radius

- | | | | | |
|---|---|-----|---------------------------|-----------|
| <input type="checkbox"/> Government reserved and designated protected area | [| ,m] | } | NONE SEEN |
| <input type="checkbox"/> Drinking water source | [| ,m] | | |
| <input type="checkbox"/> Surface water <input type="checkbox"/> Borehole | [| ,m] | | |
| <input type="checkbox"/> Built up Area | [| ,m] | | |
| <input type="checkbox"/> Residential Area <input type="checkbox"/> Commercial/Industrial Area | [| ,m] | | |
| <input type="checkbox"/> Farmlands | [| ,m] | | |
| <input type="checkbox"/> Fish Farm/Pond | [| ,m] | | |
| <input type="checkbox"/> Fishing net | [| ,m] | WITHIN THE VICINITY | |
| <input type="checkbox"/> Others (specify) _____ | [| ,m] | | |

12. Containment measures put in place:

- Booms
 Trench
 Dyke
 Pit
 Natural depression
 None
- Others: _____

13. Any pictures or video coverage? [] [N]

14. Further response/repair initiated as at the time of JIV? [Y] [N]

If yes to item 14, give brief description:

NOT APPLICABLE

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

If yes to item 15 give brief description:

NOT APPLICABLE

16. Was JIV delayed? [~~Y~~] [N]

Reason(s):

- Delayed Community Access Approval Security Challenges Access constraint due to terrain
 Others (specify) _____

D. TYPE/NUMBERS OF PROPERTIES, IF ANY, FOUND WITHIN THE AREA OF SPREAD OF OIL

17. Structures / Properties

| S/N | Type of Structures | Description | Size | Number | Comments |
|-----|--------------------|-------------|------|---------|----------|
| | NONE | WITHIN | | AREA OF | IMPACT |

18. Crops/Economic Trees

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

19. Fish/Nets/Ponds

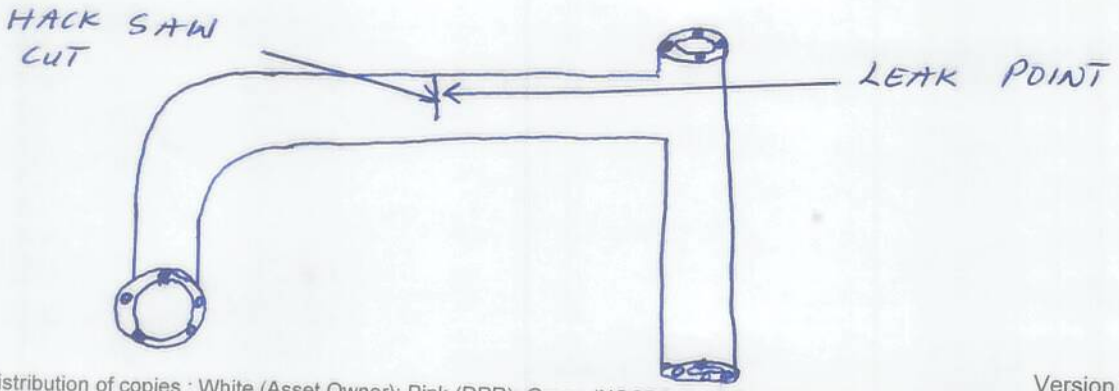
| S/N | Fish/Nets/Ponds | Description | Quantity/Size | Comments |
|-----|-----------------|-------------|---------------|-----------|
| | NONE | WITHIN | AREA | OF IMPACT |

20. Others (Specify) e.g. Animal Traps

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

E. GRAPHIC DESCRIPTION OF LEAK POINT (while detailed description of the leak point should be contained in the leak report, overview sketch of the site should be added as appendix 1)

A SECTION OF AJATITON WELL 1 LIMA FLOWLINE AT OPUKUSHI SHOWING HACK SAW CUT AT 12 O'CLOCK POSITION AT HOOK UP ARM.



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F: TABLE SHOWING SOME OF COORDINATES TAKEN DURING JIV FOR AREA CALCULATION

21. Impacted area boundary Coordinates *(If more, Print and attach as Appendix)*

WGS (84)

| S/N | Northing | Easting |
|-----|-----------|-----------|
| | 4. 876188 | 5. 857417 |
| | 4. 876003 | 5. 857644 |
| | 4. 876144 | 5. 85781 |
| | 4. 876155 | 5. 858267 |
| | 4. 876243 | 5. 858618 |
| | 4. 876487 | 5. 858599 |
| | 4. 876536 | 5. 857874 |
| | 4. 876492 | 5. 857379 |
| | 4. 875809 | 5. 857597 |
| | 4. 875815 | 5. 857423 |
| | 4. 875513 | 5. 8576 |
| | 4. 875521 | 5. 857404 |

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G. INCIDENT INFORMATION:

a. Impacted Area Details *

- Total calculated area of impact (Ha) 0.68 Ha
- Impact within SPDC R.O.W YES
- Impact outside SPDC R.O.W NO

* Round off to 2 decimal places if area is $\geq 100 \text{ m}^2$ or to 4 decimal places if area is $< 100 \text{ m}^2$ (e.g. 14.55, 0.0051, 0.0009)
* Express in Hectares (Ha)

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

| | | |
|----------------------------------|------------|---------|
| Recovered oil V_{rec} : | <u>NIL</u> | Barrels |
|----------------------------------|------------|---------|

Controlled recovery/evacuation from source with no impact to environment:

| | |
|------------|---------|
| <u>NIL</u> | Barrels |
|------------|---------|

c. Net Estimated Spilled Volume $V_{\text{Est}}(\text{bbls})^* =$

11.46 BARREL.

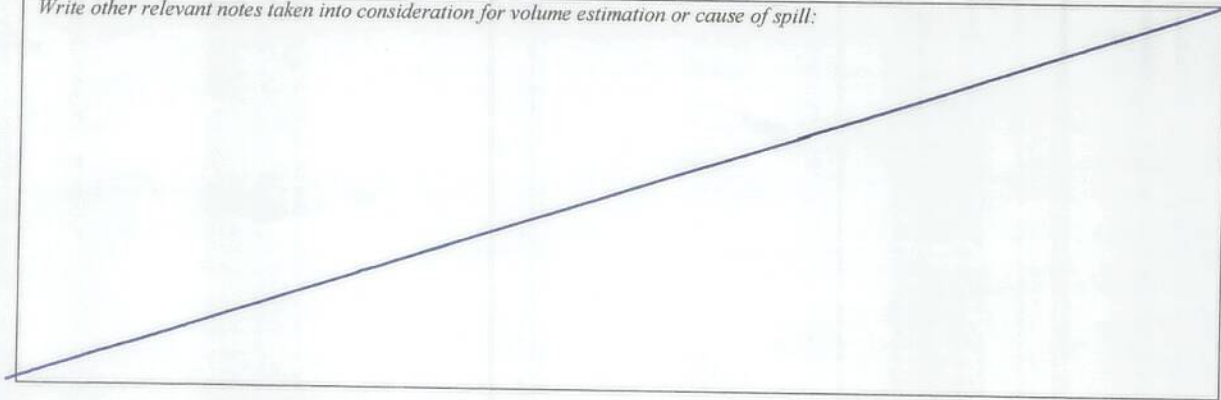
Estimated Reported Volume** $V_{\text{rep}}(\text{bbls}) =$

12 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 volume estimation or cause of spill:



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 $\text{Volume (m}^3) \times 6.29$; **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 column 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]:
- The Shell Petroleum Development Company [SPDC]:
- Separate DPR form has been filled out with same findings
- Separate NOSDRA form has been filled out with same findings
- Separate SME form has been filled out with same findings

Tick as applicable

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f. Appendix 1: Overview sketch of the site

