

JOINT INVESTIGATION REPORT

INCIDENT NO: 3023982 JIV report S/N: 0000923

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

A. GENERAL INFORMATION:

1. Fountain Incident Number: 3023982 2. Type of incident* OIL SPILL
3. Name of Location 16" NUN RIVER - KOLOCREEK PIPELINE
4. Name of nearest community AGUOBIRI 5. State: BAYELSA 6. LGA SOUTHERN-IJAW
7. Production Facility/Installation OIL PIPELINE
8. Asset Owner/Hub TITE SHELL PETROLEUM DEVELOPMENT COMPANY OF NIGERIA LIMITED (SPDC) / PIPELINE

B. INCIDENT INFORMATION:

9. Details of incident
a. Date Reported: 4th SEPTEMBER, 2021
b. Start date/time of Investigation: 7th SEPTEMBER, 2021 / 1200HRS
c. Investigation End date: 7th SEPTEMBER, 2021 Day(s) on site: 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 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:

NOT APPLICABLE

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

- | | | |
|--|---|--|
| <input type="checkbox"/> Smooth round-edge hole | <input type="checkbox"/> Rough-edge hole | <input 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 checked="" 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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Blue (Host Community)

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

h. Measuring unit

| Northings: | Easting: |
|------------|----------|
| 4.824192 | 6.147686 |
| | |
| | |

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

- ☐ Government reserved and designated protected area [NIL ,m]
☐ Drinking water source [NIL ,m]
 ☐ Surface water ☐ Borehole
☐ Built up Area [NIL ,m]
 ☐ Residential Area ☐ Commercial/Industrial Area
☒ Farmlands [IMPACTED]
☐ Fish Farm/Pond [NIL ,m]
☐ Fishing net [NIL ,m]
☐ Others (specify) _____ [NIL ,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] [✓]

If yes to item 14, give brief description:

NOT APPLICABLE

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15. Was there any disruption to the investigation?

[Y] [X]

If yes to item 15 give brief description:

NOT APPLICABLE

16. Was JIV delayed? [Y] [X]

Reason(s):

☐ Delayed Community Access Approval ☐ Security Challenges ☐ Access constraint due to terrain
☒ Others (specify) NOT APPLICABLE

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

18. Crops/Economic Trees

| S/N | Type of crops | Young | Medium | Matured | Quantity | Comments |
|-----|-----------------|--------------|------------|-------------|--------------|--------------------------|
| 1. | <u>CASSAVA</u> | <u>FEW</u> | <u>FEW</u> | <u>MANY</u> | <u>MANY</u> | <u>IMPACTED BY SPILL</u> |
| 2. | <u>PLANTAIN</u> | <u>4 NOS</u> | <u>NIL</u> | <u>NIL</u> | <u>4 NOS</u> | <u>IMPACTED BY SPILL</u> |

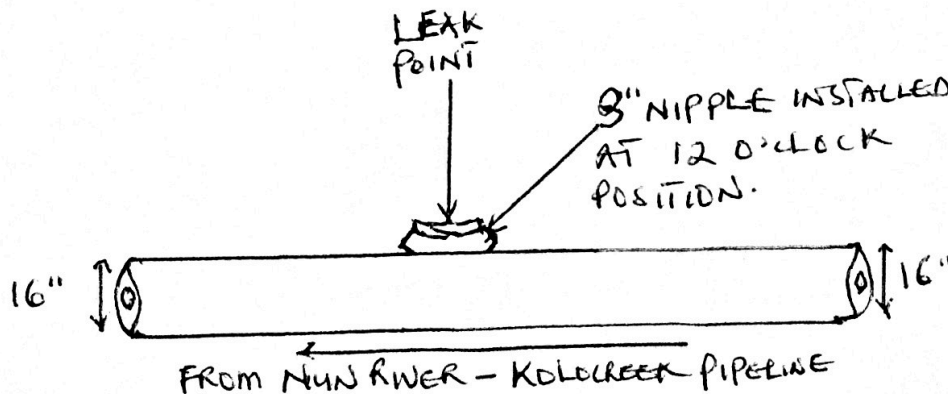
19. Fish/Nets/Ponds

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

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

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

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 16" NUN RIVER - KOLICREEK PIPELINE AT AGUOBIRI SHOWING A 3" NIPPLE INSTALLED AT 12 O'CLOCK POSITION DONE BY UNKNOWN PERSONS.



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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)

NGS 84

| S/N | Northing | Easting |
|-----|-----------|-----------|
| | 4. 824692 | 6. 149248 |
| | 4. 824842 | 6. 149316 |
| | 4. 825017 | 6. 149261 |
| | 4. 824736 | 6. 149068 |
| | 4. 824653 | 6. 148886 |
| | 4. 824533 | 6. 148387 |
| | 4. 824387 | 6. 147959 |
| | 4. 824290 | 6. 147699 |
| | 4. 824316 | 6. 147493 |
| | 4. 824602 | 6. 147537 |
| | 4. 82458 | 6. 147484 |
| | 4. 824393 | 6. 147474 |
| | 4. 824252 | 6. 147486 |
| | 4. 824096 | 6. 147132 |
| | 4. 824016 | 6. 147298 |
| | 4. 824171 | 6. 147777 |
| | 4. 824304 | 6. 147894 |
| | 4. 824398 | 6. 148152 |
| | 4. 824446 | 6. 148314 |
| | 4. 824519 | 6. 148561 |
| | 4. 824563 | 6. 148718 |
| | 4. 824606 | 6. 148900 |

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G. INCIDENT INFORMATION:

a. Impacted Area Details *

- Total calculated area of impact (H_a) 0.29 ha
- Impact within SPDC R.O.W YES
- Impact outside SPDC R.O.W YES

* 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 (H_a)

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 |
|------------|---------|

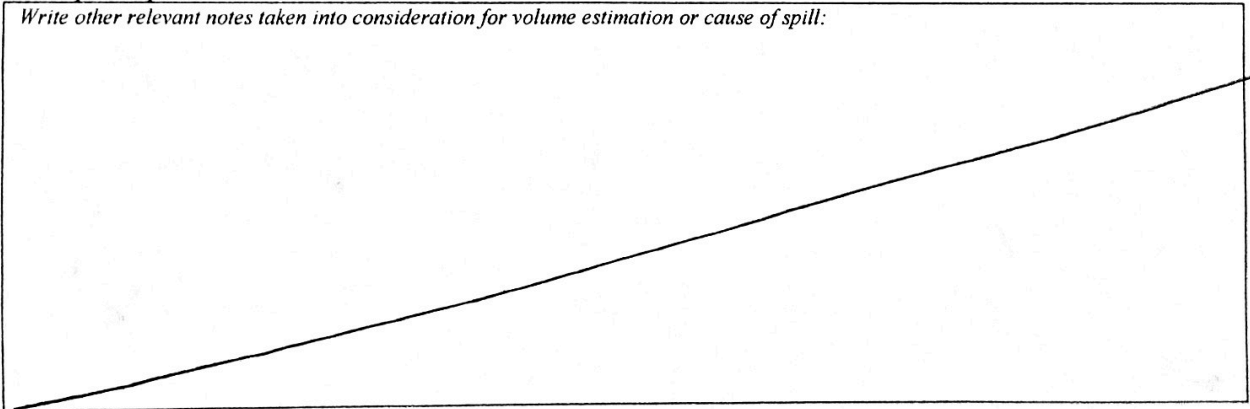
c. Net Estimated Spilled Volume $V_{\text{Est}}(\text{bbls})^* = 120.84 \text{ BARRELS}$

Estimated Reported Volume** $V_{\text{rep}}(\text{bbls}) = 121 \text{ BARRELS}$

*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 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

