

JOINT INVESTIGATION REPORT

INCIDENT NO: 2625817 JIV report S/N: 0505

(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: 2625817 2. Type of incident* OIL SPILL
3. Name of Location 20th RUMUEKPE - NKPOKU PIPELINE
4. Name of nearest community IBAA 5. State: RIVERS 6. LGA EMOHUA
7. Production Facility/Installation OIL PIPELINE
8. Asset Owner/Hub THE SHELL PETROLEUM DEVELOPMENT COMPANY OF NIGERIA LIMITED (SPDC / PIPELINE)

B. INCIDENT INFORMATION:

9. Details of incident

- a. Date Reported: 16TH APRIL 2020
b. Start date/time of Investigation: 17TH APRIL 2020 / 13:40HRS
c. Investigation End date: 18TH APRIL 2020 Day(s) on site: TWO (2)
d. Description of spill point environment

- | | | |
|---|--|--|
| <input type="checkbox"/> Firm soil | <input checked="" type="checkbox"/> Loose soil | <input type="checkbox"/> Recently excavated area |
| <input checked="" 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 checked="" type="checkbox"/> Sand bag(s) |

Additional observations around the spill point:

NOT APPLICABLE

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

- | | | |
|---|---|--|
| <input checked="" 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 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

Distribution of copies: White (Asset Owner); Pink (DPR); Green (NOSDRA); Yellow (State Ministry of Environment); Blue (Host Community) Version 2020/01

JOINT INVESTIGATION REPORT

0505

INCIDENT NO: 2625817 JIV report S/N:

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

h. Measuring unit WGS 84

| Northing: | Easting: |
|-----------|----------|
| 4.954264 | 6.815370 |
| / | / |
| / | / |

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 [,m]
 Drinking water source [,m]
 Surface water Borehole
 Built up Area [,m]
 Residential Area Commercial/Industrial Area
 Farmlands [10 ,m]
 Fish Farm/Pond [,m]
 Fishing net [,m]
 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? [N]

If yes to item 14, give brief description:

SPILL RECOVERY | REPAIRS BY CLAMPING

JOINT INVESTIGATION REPORT

INCIDENT NO: 2625817 JIV report S/N: 0505

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

If yes to item 15 give brief description:

NOT APPLICABLE

16. Was JIV delayed? [X] [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 |
|-----------------------------------|--------------------|-------------|------|--------|----------|
| <u>NONE WITHIN AREA OF IMPACT</u> | | | | | |

18. Crops/Economic Trees

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

19. Fish/Nets/Ponds

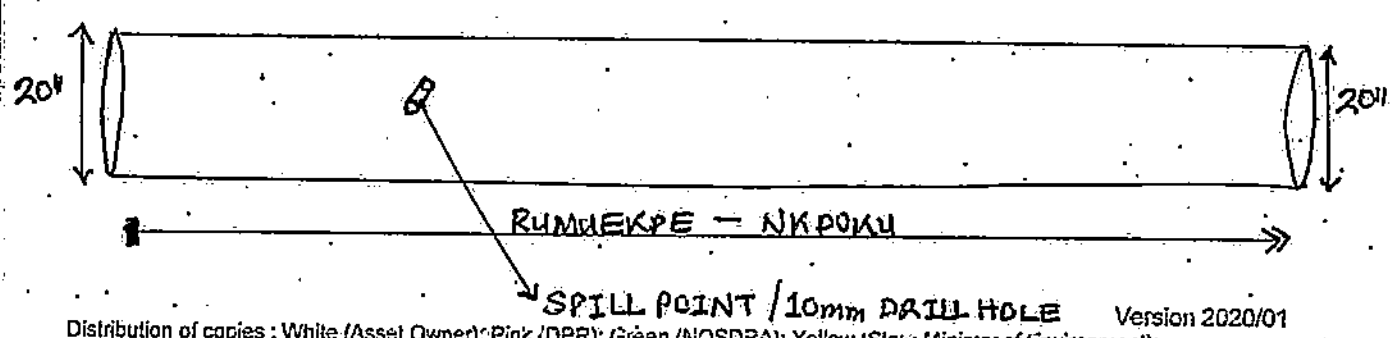
| S/N | Fish/Nets/Ponds | Description | Quantity/Size | Comments |
|-----------------------------------|-----------------|-------------|---------------|----------|
| <u>NONE WITHIN AREA OF IMPACT</u> | | | | |

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 20" RUMUEKPE - NKPOKU PIPELINE AT IBAA SHOWING 10mm DIAMETRE DRILL HOLE BY UNKNOWN PERSON AT 3 O'CLOCK POSITION.



JOINT INVESTIGATION REPORT

INCIDENT NO: 2625817 JIV report S/N: 0505

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

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

| S/N | Northing | Easting |
|-----|----------|--------------------|
| 1. | 6.81537 | 4.954264 |
| 2. | 6.81545 | 4.95437 4.95443 |
| 3. | 6.81534 | 4.95453 |
| 4. | 6.81521 | 4.95463 |
| 5. | 6.81507 | 4.95459 |
| 6. | 6.81488 | 4.95461 |
| 7. | 6.81493 | 4.95472 |
| 8. | 6.81487 | 4.95471 |
| 9. | 6.81458 | 4.9547 |
| 10. | 6.81445 | 4.95454 |
| 11. | 6.8134 | 4.95413 |
| 12. | 6.81408 | 4.95409 |
| 13. | 6.81429 | 4.95412 |
| 14. | 6.81478 | 4.9541 |
| 15. | 6.81495 | 4.9541 |
| 16. | 6.81512 | 4.95419 |
| 17. | 6.81525 | 4.95421 |
| 18. | 6.81539 | 4.95426 |
| 19. | 6.81522 | 4.95426 |
| | | |
| | | |
| | | |
| | | |

JOINT INVESTIGATION REPORT

INCIDENT NO: 2625817 JIV report S/N: 0505

G. INCIDENT INFORMATION:

a. Impacted Area Details *

- Total calculated area of impact (Ha) 1.05 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 (Ha)

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

| | | |
|----------------------------------|-----------|---------|
| Recovered oil V_{rec} : | <u>69</u> | Barrels |
|----------------------------------|-----------|---------|

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

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

| |
|--|
| c. Net Estimated Spilled Volume V_{Est} (bbbls) = <u>283.26 BARRELS</u> |
| Estimated Reported Volume** V_{rep} (bbbls) = <u>284 BARRELS</u> |

*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.

Version 2020/01

Distribution of copies : White (Asset Owner); Pink (DPR); Green (NOSDRA); Yellow (State Ministry of Environment); Blue (Host Community)

JOINT INVESTIGATION REPORT

INCIDENT NO: 2625817 JIV report S/N: 0505

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:

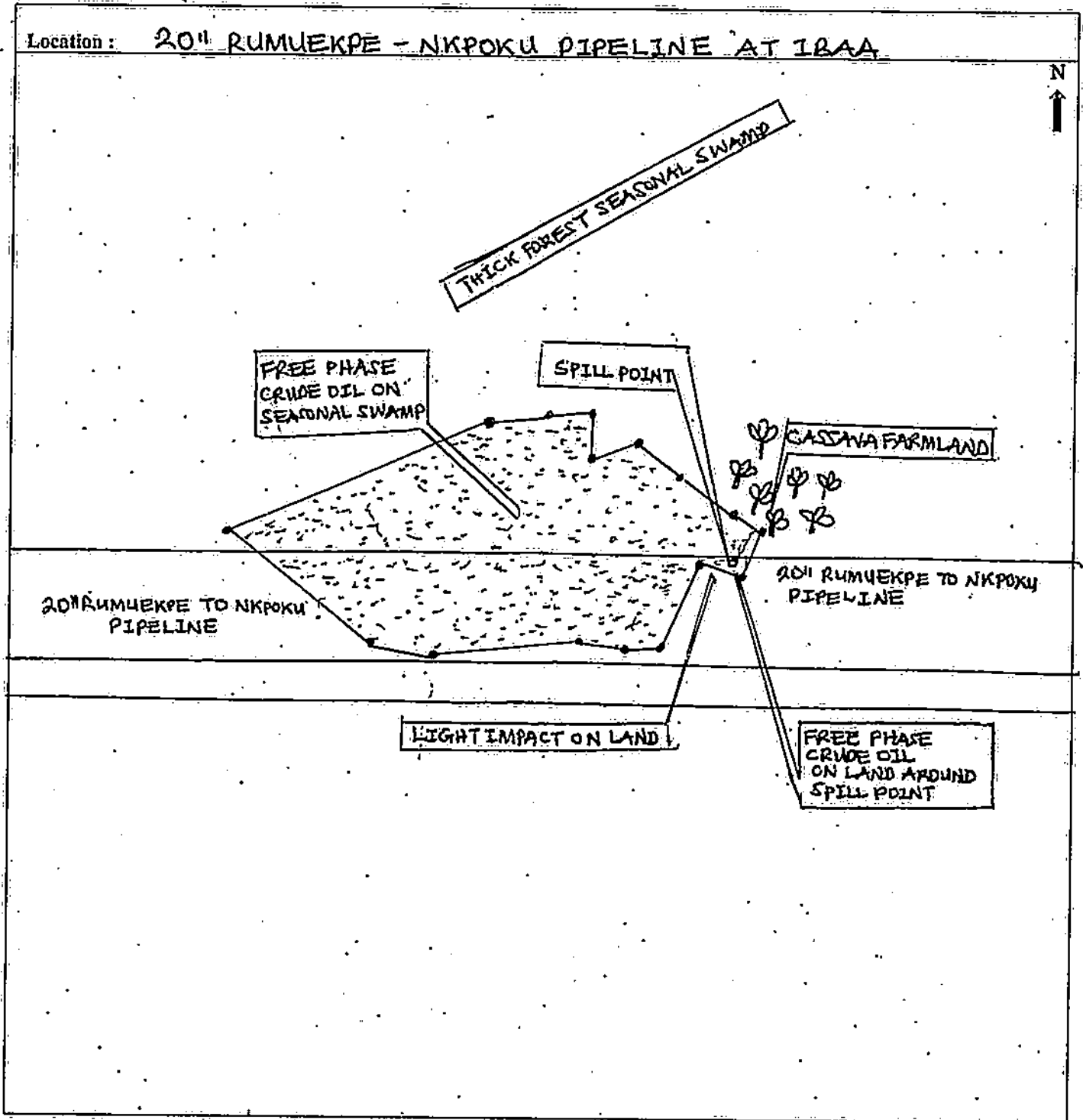
- Host Community:
- Department of Petroleum Resources [DPR]:
- National Oil Spill Detection and Response Agency [NOSDRA]:
- State Ministry of Environment [SME]:
- The Shell Petroleum Development Company [SPDC]:
- Separate DPR form has been filled out with same findings
- Separate NOSDRA form has been filled out with same findings
- Separate SME form has been filled out with same findings

Tick as applicable

JOINT INVESTIGATION REPORT

INCIDENT NO: 2625817 JIV report S/N 0505

f. Appendix 1: Overview sketch of the site



Version 2020/01

Distribution of copies: White (Asset Owner); Pink (DPR); Green (NOSDRA); Yellow (State Ministry of Environment); Blue (Host Community)