

# JOINT INVESTIGATION REPORT

INCIDENT NO: 2208414 JIV report S/N: 0174

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

## A. GENERAL INFORMATION:

1. Spill incident Number: 2208414 2. Type of incident\*: OIL SPILL  
3. Name of Location IND RIVER WELL 36 GAS LIFT LINE  
4. Name of nearest community MIRLUKUN - OWAZA 5. State: ABIA 6. LGA UKWA - WEST  
7. Type of Production facility/Installation FLOWLINE  
8. Asset owner/District THE SHELL PETROLEUM DEVELOPMENT COMPANY OF NIGERIA LIMITED.

## B. INCIDENT INFORMATION:

### 9. Details of incident

- a. Date of incident: 15<sup>TH</sup> NOVEMBER 2018  
b. Start date/time of investigation: 21<sup>ST</sup> NOVEMBER 2018 / 13:55 HRS.  
c. Investigation End date: 21<sup>ST</sup> NOVEMBER 2018 Actual investigation duration, days: 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  |                                                          |

Additional observations around the spill point:

NOT APPLICABLE

### 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 <sup>rd</sup> party equipment impact |
| <input type="checkbox"/> Corrosion                                 | <input type="checkbox"/> Others(specify) _____   |                                                                            |

### f. Incident caused by:

- Third party interference (Sabotage; crude theft; Line theft; Accidental 3<sup>rd</sup> party damage  
 Operational  Mystery spills  Others(specify) \_\_\_\_\_

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g. Spill point coordinates

Measuring unit WGS 84

| Northing:        | Easting:         |
|------------------|------------------|
| <u>04:98175'</u> | <u>007:18227</u> |
|                  |                  |
|                  |                  |

## 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
- Drinking water source
- Built up area
- Farmlands
- Fish Farm/Pond
- Fishing net
- Others (specify):

[ NIL ,m]  
 [ NIL ,m]  
 [ NIL ,m]  
 [ NIL ,m]  
 [ NIL ,m]  
 [ NIL ,m]  
 [ NIL ,m]  
 NONE

12. Containment measures put in place;

- Booms     
  Trench     
  Dyke     
  Natural depression     
  Pit     
  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

15. Was there any disruption to the investigation?

[Y]

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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>NONE WITHIN AREA OF IMPACT</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 detailed 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 INTO RIVER WELL 36 GAS LIFT LINE AT GIRIUKU - DWAZA SHOWING POSITION OF LEAK POINT (HACKSAW CUT).

8cm LONG HACKSAW CUT

FROM 12 O'CLOCK

TO 3 O'CLOCK

POSITION (LEAKING).

SPILL POINT

2cm (NON LEAKING) LONG

HACKSAW CUT FROM 1 O'CLOCK

TO 2 O'CLOCK POSITION.



WELLHEAD - INJECTION MANIFOLD

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**G. INCIDENT INFORMATION:**

**a. Impacted Area Details**

- Total calculated area of impact 0.003373 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 |
|----------------------------|-----|---------|

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

|     |         |
|-----|---------|
| NIL | Barrels |
|-----|---------|

|                                                                       |                                                    |
|-----------------------------------------------------------------------|----------------------------------------------------|
| <b>c. Net Estimated Spilled Volume <math>V_{est}</math> (bbls)* =</b> | <span style="font-size: 1.5em;">0.26 BARREL</span> |
| <b>Estimated Reported Volume** <math>V_{rep}</math> (bbls) =</b>      | <span style="font-size: 1.5em;">0.3 BARREL</span>  |

**\*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 volume in the box below:

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<sup>3</sup> to barrels is Volume (m<sup>3</sup>) 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 JIV 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"><li>• Host Community: <input checked="" type="checkbox"/></li><li>• Department of Petroleum Resources [DPR]: <input checked="" type="checkbox"/></li><li>• National Oil Spill Detection and Response Agency [NOSDRA]: <input checked="" type="checkbox"/></li><li>• State Ministry of Environment [SME]: <input checked="" type="checkbox"/></li><li>• Asset Owner: <input checked="" type="checkbox"/></li><li>• Signatories agree with reported findings: <input checked="" type="checkbox"/></li><li>• Separate DPR form has been filled out with same findings <input type="checkbox"/></li></ul> <p style="text-align: right;"><i>Tick as applicable</i></p> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# JOINT INVESTIGATION REPORT

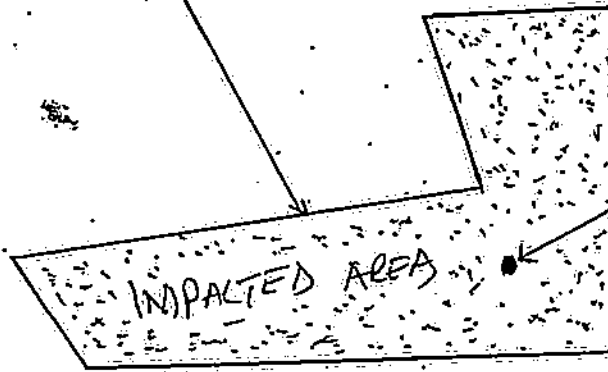
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f. Appendix 1: Overview sketch of the site

Location: IND RIVER WELL 36 GAS LIFT LINE AT GURUKISHU-DWAZA

SPDC RIGHT OF WAY

EXTENT OF IMPACT



SPDC RIGHT OF WAY