

JOINT INVESTIGATION REPORT

INCIDENT NO: 2713439 JIV report S/N: 0689

(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: 2713439 2. Type of incident* OIL SPILL
3. Name of Location 4" IMO RIVER I WELL 36S FLOWLINE
4. Name of nearest community ISIETITIOHA 5. State: ABIA 6. LGA UKWA WEST
7. Production Facility/Installation FLOWLINE
8. Asset Owner/Hub THE SHELL PETROLEUM DEVELOPMENT COMPANY OF NIGERIA LTD (SPDC) /LAND EAST HUB

B. INCIDENT INFORMATION:

9. Details of incident

- a. Date Reported: 21ST AUGUST 2020
b. Start date/time of Investigation: 25TH AUGUST 2020/1400HRS
c. Investigation End date: 25TH AUGUST 2020 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

Northings: <u>LATITUDE</u>	Easting: <u>LONGITUDE</u>
<u>4.97892</u>	<u>7.1808</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

☐ Government reserved and designated protected area

☐ Drinking water source

☐ Surface water

☐ Borehole

☐ Built up Area

☐ Residential Area

☐ Commercial/Industrial Area

☐ Farmlands

☐ Fish Farm/Pond

☐ Fishing net

☐ Others (specify) _____

[,m]
[,m]
[,m]
[,m]
[,m]
[,m]
[,m]

NONE SEEN
WITHIN
VICINITY

12. Containment measures put in place:

☐ Booms

☐ Trench

☐ Dyke

☐ Pit

☐ Natural depression

☒ None

☐ Others: _____

13. Any pictures or video coverage?

[X] [N]

14. Further response/repair initiated as at the time of JIV?

[Y] [X]

If yes to item 14, give brief description:

NDT 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?

[X] [N]

Reason(s):

- ☐ Delayed Community Access Approval ☐ Security Challenges ☐ Access constraint due to terrain
☐ Others (specify) COVID-19 SAFETY PROTOCOLS

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>					

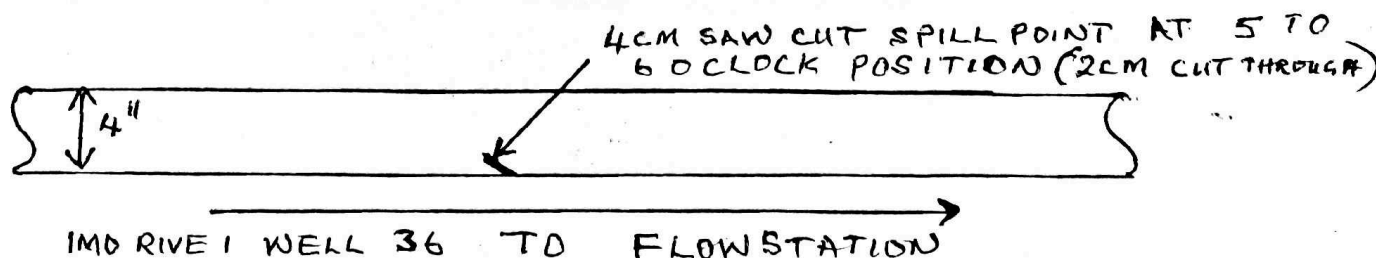
19. Fish/Nets/Ponds

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 4" IMO RIVER I WELL 36 S FLOWLINE AT 131ETITIDHA SHOWING 4CM HACK SAW CUT AT 5 TO 6 O'CLOCK POSITION DONE BY UNKNOWN PERSONS.



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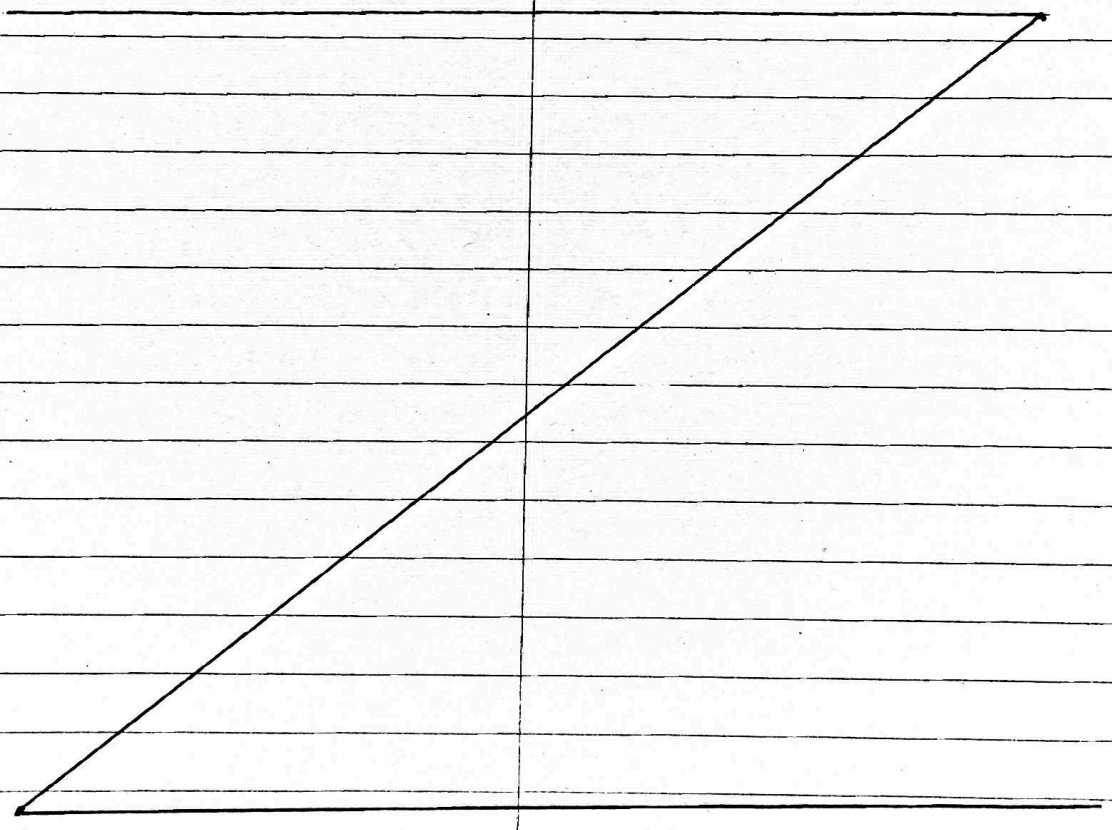
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F: TABLE SHOWING SOME OF COORDINATES TAKEN DURING JIV FOR AREA CALCULATION

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

WGS 84

S/N	Northing LATITUDE	Easting LONGITUDE
1	4.97891	7.1808
2	4.97888	7.1808
3	4.97888	7.18078
4	4.97888	7.18076
5	4.9789	7.18076
6	4.97891	7.18077
7	4.97895	7.18078
8	4.97895	7.1808
		

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G. INCIDENT INFORMATION:

a. Impacted Area Details *

- Total calculated area of impact (Ha) 0.0023 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
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Controlled recovery/evacuation from source with no impact to environment:

<u>NIL</u>	Barrels
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c. Net Estimated Spilled Volume $V_{\text{Est}}(\text{bbls})^* =$

0.07 BARREL

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

0.1 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 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

Location: 4" IMDRIVERI WELL 36S FLOWLINE AT ISIETITIDHA

FLOWLINE MANIFOLD SLOT

N
↑

4" IMDRIVERI WELL 36S FLOWLINE
AT ISIETITIDHA

SPILL
POINT

IMPACTED
AREA

SPDC RIGHT OF WAY
FLOWLINE MANIFOLD SLOT