

JOINT INVESTIGATION REPORT

INCIDENT NO: 3016032 JIV report S/N: 0000958

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

A. GENERAL INFORMATION:

1. Fournain Incident Number: 3016032 2. Type of incident* OIL SPILL
3. Name of Location 18" ASSA - RUMUEKPE PIPELINE
4. Name of nearest community RUMUEKPE 5. State: RIVERS 6. LGA
7. Production Facility/Installation CRUDE 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: 26th AUGUST, 2021
b. Start date/time of Investigation: 27th AUGUST, 2021/1400HRS
c. Investigation End date: 27th AUGUST, 2021 Day(s) on site: ONE DAY
d. Description of spill point environment
☐ Firm soil ☒ Loose soil ☒ Recently excavated area
☐ Under water ☐ Swampy ☐ Exposed pipe surface
☐ Well Platform (on water) ☐ Drill Rig ☐ 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 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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Version 2020/01

JOINT INVESTIGATION REPORT

000958

INCIDENT NO: 3016032 JIV report S/N:

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

h. Measuring unit

WGS84

Northing:	Easting:
<u>4.99485</u>	<u>6.69566</u>

G. 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:

REPAIR BY CLAMPING

JOINT INVESTIGATION REPORT

INCIDENT NO: 3016032 JIV report S/N: 0000958

13. Was there any disruption to the investigation? (Y) (X)

If yes to item 13 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
	NONE SEEN	WITHIN AREA OF IMPACT			

18. Crops/Economic Trees

S/N	Type of crops	Young	Medium	Matured	Quantity	Comments
1	PLANTAIN		✓		FEW	WIPAC (ED)
2	CALABASH			✓	FEW	WIPAC (ED)

19. Fish/Nets/Ponds

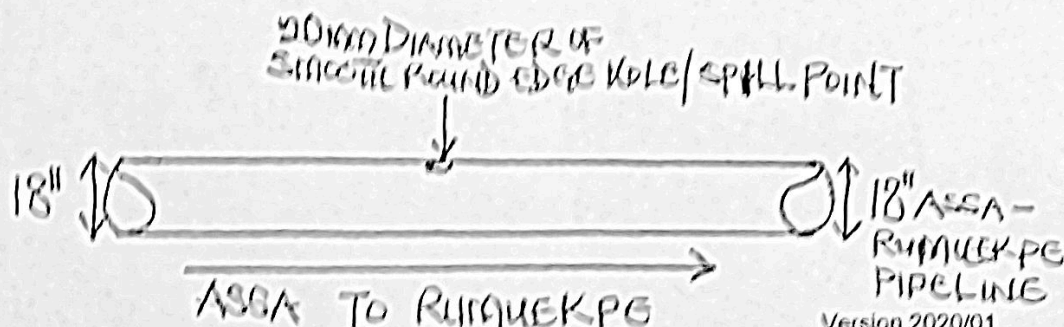
S/N	Fish/Nets/Ponds	Description	Quantity/Size	Comments
	NONE SEEN	WITHIN AREA OF IMPACT		

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

S/N	Others	Description	Quantity/Size	Comments
	NONE SEEN	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 18" ASSA -

RUMUEKPE PIPELINE AT RUMUEKPE SHOWING A DOWN SLOPED ROUND-EDGE HOLE AT 12 O'CLOCK POSITION BY UNKNOWN PERSON(S).



JOINT INVESTIGATION REPORT

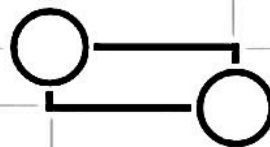
INCIDENT NO: 30/6032 JIV report S/N: 0000958

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

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

[illegible]

1	FID 3016032					
2	LAT ▼	LONG ▼				
3	4.99486	6.69579				
4	4.99477	6.69578				
5	4.99471	6.69574				
6	4.99469	6.69563				
7	4.99464	6.69557				
8	4.99458	6.69557				
9	4.99452	6.69553				
10	4.99432	6.69551				
11	4.99431	6.69545				
12	4.99435	6.69541				
13	4.99468	6.69551				
14	4.99467	6.69543				
15	4.99509	6.69511				
16	4.99514	6.69514				
17	4.99571	6.69501				
18	4.99759	6.6945				
19	4.99757	6.6946				
20	4.99747	6.69492				
21	4.99713	6.69478				
22	4.99572	6.69509				
23	4.99534	6.69517				
24	4.99519	6.6953				
25	4.9951	6.69538				
26	4.99531	6.69546				
27	4.99531	6.69547				
28	4.99509	6.69542				
29	4.99491	6.69556				
30	4.9949	6.69562				
31	4.99492	6.69569				
32	4.99496	6.69573				
33	4.99503	6.69578				
34	4.99495	6.69581				
35	4.99485	6.69566				
36						



JOINT INVESTIGATION REPORT

INCIDENT NO: 3016032 JIV report S/N: 0000958

G. INCIDENT INFORMATION:

a. Impacted Area Details *

- Total calculated area of impact (Ha) 0.68HA
- 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>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 $V_{\text{Est}}(\text{bbls})^* = 85.49 \text{ BARRELS}$

Estimated Reported Volume** $V_{\text{rep}}(\text{bbls}) = 86 \text{ BARRELS}$

*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:

NOT APPLICABLE

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

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JOINT INVESTIGATION REPORT

INCIDENT NO: 3016032 JIV report S/N: 000958

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

