

JOINT INVESTIGATION REPORT

INCIDENT NO: 2331302 JIV report S/N: 0113

(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: 2331302 2. Type of incident*: OIL SPILL
3. Name of Location: 14" OKORDIA - RUMUKEPE PIPELINE
4. Name of nearest community UKPELEDE S. State: RIVERS G.LGA AHOADA WEST
5. Production facility/Installation OIL PIPELINE
8. Asset owner/District THE SHELL PETROLEUM DEVELOPMENT COMPANY OF NIGERIA LIMITED / PIPELINE

B. INCIDENT INFORMATION:

9. Details of incident

- a. Date of incident: 24TH APRIL 2019
- b. Start date/time of investigation: 28TH APRIL 2019 / 1330HRS
- c. Investigation End date: 28TH APRIL 2019 Actual investigation duration, days: 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 checked="" type="checkbox"/> Swampy | <input type="checkbox"/> Exposed pipe surface |
| <input type="checkbox"/> Well-Platform (on Water) | <input type="checkbox"/> Drill Rig | |

Additional observations around the spill point:

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

- | | | |
|---|--|--|
| <input type="checkbox"/> Drilled hole | <input 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 checked="" 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"/> Corrosion | <input type="checkbox"/> Others(specify) _____ | |

f. Incident caused by:

- Third party interference (Sabotage ; crude theft ; Line theft ; Accidental 3rd party damage)
- Operational Mystery spills Others(specify) _____

*This can be: a) Oil Spill b) Drilling fluid/Chemical c) Siltation d) construction e) Encroachment f) Fire. Version 2018/01
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JOINT INVESTIGATION REPORT

INCIDENT NO: 2331302 JIV report S/N: 0113

g. Spill point coordinates

Measuring unit

WGS 84

Northing:	Easting:
<u>5.08898</u>	<u>6.53346</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 ^{SEASONAL}
 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): _____

[116 ,m]
 [212 ,m]
 [112 ,m]
 [112 ,m] OIL STAINED
 [112 ,m]
 [112 ,m]

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?

[N]

If yes to item 14, give brief description:

REPAIR AND RECOVERY ACTIVITIES ARE ONGOING

15. Was there any disruption to the investigation?

[Y] [N]

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JOINT INVESTIGATION REPORT

INCIDENT NO: 2331302 JIV report S/N: 0113

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
NONE WITHIN AREA OF IMPACT					

17. Crops/Economic Trees

S/N	Type of crops	Young	Medium	Matured	Quantity	Comments
1	CASSAVA	✓	✓	—	MANY	IMPACTED
2	COCOA	✓	✓	—	Few	BY OIL SPRAY
3	PALMTREE	—	✓	✓	Few	SPRAY

18. Fishing Nets/Fish Ponds

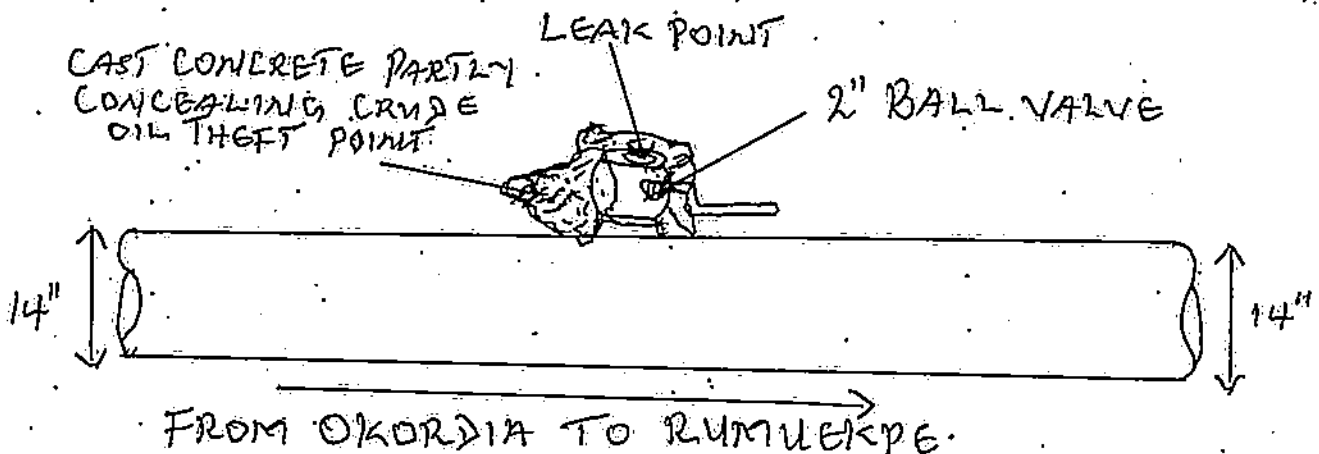
S/N	Nets/Ponds	Description	Quantity/Size	Comments
NONE WITHIN AREA OF IMPACT				

19. Others (Specify) i.e. Animal Traps

S/N	Others	Description	Quantity/Size	Comments
NONE WITHIN AREA OF IMPACT				

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 14" OKORDIA - RUMUKEPE PIPELINE AT UNRELIABLE SHOWING CRUDE OIL THEFT POINT AT 12 O'CLOCK POSITION.



**Incident No. 2331302 JIV @ 14" Okordia -
Rumuekpe (TL) at Ukpeliede.**

PT_ID	LONGITUDE (WGS 84)	LATITUDE (WGS 84)
E1	6.53311	5.08935
E2	6.533	5.08922
14	6.5337	5.08894
13	6.53366	5.08883
12	6.53354	5.0888
11	6.53349	5.0888
10	6.53342	5.08876
9	6.53334	5.08885
8	6.53342	5.08894
7	6.53335	5.08906
6	6.53329	5.08905
5	6.53311	5.08914
4	6.53304	5.08923
3	6.53309	5.08933
2	6.5332	5.08929
1	6.53325	5.08932
348	6.53404	5.08875
364	6.53419	5.08854
363	6.53416	5.08845
362	6.53412	5.08838
361	6.53406	5.08843
360	6.53408	5.08848
359	6.53406	5.08853
350	6.53392	5.08862
351	6.53387	5.08859
355	6.53373	5.08864
353	6.53358	5.08866
354	6.5335	5.08871

Team to

JOINT INVESTIGATION REPORT

INCIDENT NO: 2331302 JIV report S/N: 0113

G. INCIDENT INFORMATION:

a. Impacted Area Details

- Total calculated area of impact 0.36203 Ha
- Impact within R.O.W YES
- Impact outside R.O.W YES

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_{est} (bbls)*=	<u>149.78 BARRELS</u>
Estimated Reported Volume** V_{rep} (bbls)=	<u>150 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 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^3 to barrels is Volume (m^3) 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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JOINT INVESTIGATION 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:	<input checked="" type="checkbox"/>
• Department of Petroleum Resources [DPR]:	<input type="checkbox"/>
• National Oil Spill Detection and Response Agency [NOSDRA]:	<input checked="" type="checkbox"/>
• State Ministry of Environment [SME]:	<input checked="" type="checkbox"/>
• Asset Owner:	<input checked="" type="checkbox"/>
• Signatories agree with reported findings:	<input checked="" type="checkbox"/>
• Separate DPR form has been filled out with same findings	<input type="checkbox"/>
<i>Tick as applicable</i>	

JOINT INVESTIGATION REPORT

INCIDENT NO: ~~2331302~~ 2331302 JIV report S/N: 0113

f. Appendix I: Overview sketch of the site

