

# JOINT INVESTIGATION REPORT

INCIDENT NO: 2410695 JIV report S/N: 1030056

(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: 2410695 2. Type of incident\* OIL SPILL  
3. Name of Location 14" OKORDIA - KUMUKPE (TRUNKLINE) PIPELINE  
4. Name of nearest community IKARMA 5. State: BAYELSA 6. LGA YENAGOA  
7. Type of 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 Reported: 27<sup>th</sup> JULY 2019  
b. Start date/time of investigation: 30<sup>th</sup> JULY, 2019  
c. Investigation End date: 31<sup>st</sup> JULY 2019 Actual investigation duration, days: TWO DAYS  
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 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: THE JOINT INVESTIGATION TEAM OBSERVED THAT THE IMPACTED AREA FROM THE INCIDENT OVERLAPS THE PREVIOUSLY IMPACTED AREA FROM INCIDENT NUMBER 2018-2097834 AND 2018-2076704.

### 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 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 checked="" type="checkbox"/> Others (specify) <u>LOCALIZED CORROSION. (INTERNAL CORROSION)</u> |   |  |

### f. Incident caused by:

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

\*This can be: a) Oil Spill b) Drilling fluid/Chemical c) Siltation d) construction e) Encroachment f) Fire, g) non leaking Theft point removal  
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g. Spill point coordinates

h. Measuring unit

Northing:	Easting:
5.15351N	6.45287E

## 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 to Sensitive habitat within 100m radius

- Government reserved and designated protected area
- Drinking water source
- Built up area
- Farmlands
- Fish Farm/Pond
- Fishing net
- Others (specify):

[ ,m] } NONE SEEN  
 [ ,m] } WITHIN  
 [ ,m] } VICINITY.  
 [ ,m]  
 [ ,m]

12. Containment measures put in place;

- Booms     
  Trench     
  Dyke     
  Natural depression     
  Pit     
  None  
 Others: \_\_\_\_\_

13. Any pictures or video coverage?

[X] [N]

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

[Y] [N]

If yes to item 14, give brief description:

RECOVERY AND REPAIR WORK ARE ON-GOING

15. Was there any disruption to the investigation?

[Y] [X]

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If yes to item 15 give brief description:

NOT APPLICABLE

16. Was JIV delayed? [Y] [N]

If yes to item 16 give brief description: 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 WITHIN AREA OF IMPACT					

**18. Crops/Economic Trees**

S/N	Type of crops	Young	Medium	Matured	Quantity	Comments
NONE WITHIN AREA OF IMPACT						

**19. Fish/Nets/Ponds**

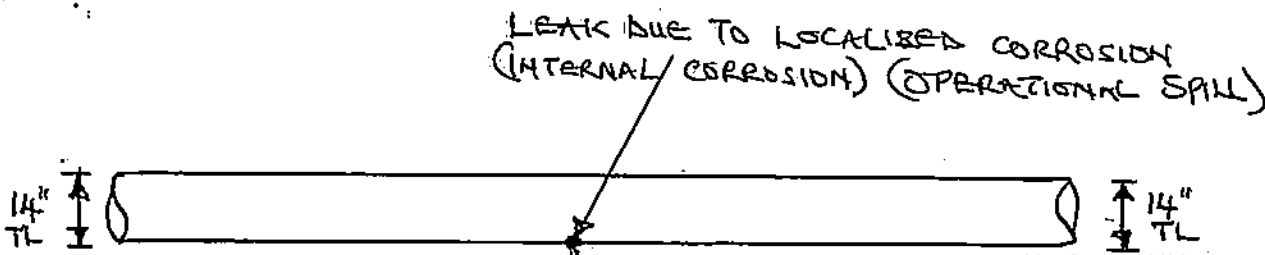
S/N	Fish/Nets/Ponds	Description	Quantity/Size	Comments
NONE WITHIN AREA OF IMPACT				

**20. 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 detail report of the leak point should be contained in the leak report, overview sketch of the site should be added as an appendix 1)

SECTIONAL VIEW OF 14" OKORDIA - RUMUEKPE TRUNKING PIPELINE AT IKARAMA: SHOWING LEAK DUE TO LOCALIZED CORROSION.





**JIV ALONG 14" OKORDIA TO RUMUEKPE T/L @ IKARAMA**

PT_ID	Latitude	Longitude
Spill point	5.15351	6.45287
1	5.15124	6.44795
2	5.15132	6.44818
3	5.15147	6.44839
4	5.15156	6.44853
5	5.15158	6.44866
6	5.15174	6.44934
7	5.15157	6.44946
8	5.15156	6.44953
9	5.1516	6.44968
10	5.15168	6.44977
11	5.15201	6.44986
12	5.15226	6.45018
13	5.15248	6.45063
14	5.15264	6.45107
15	5.15276	6.45123
16	5.15309	6.45181
17	5.15319	6.45198
18	5.1536	6.45267
19	5.15365	6.45271
20	5.15376	6.45284
21	5.15377	6.45289
22	5.15379	6.45296
23	5.15378	6.45314
24	5.15372	6.45319
25	5.15349	6.45301
26	5.15344	6.45303
27	5.15334	6.45298
28	5.15332	6.45285
29	5.15328	6.45267
30	5.15332	6.45264
31	5.15329	6.45252
32	5.15326	6.45235
33	5.15317	6.45221
34	5.15259	6.4514
35	5.15243	6.45069
36	5.15223	6.45023
37	5.15214	6.45009
38	5.15206	6.45005
39	5.1518	6.44994
40	5.15151	6.44975
41	5.15155	6.44941
42	5.15152	6.44938
43	5.15115	6.44796

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## G. INCIDENT INFORMATION:

### a. Impacted Area Details:

- Total calculated area of impact 1.188796 HECTARES
- Impact within SPDC R.O.W. YES
- Impact outside SPDC 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 $V_{ES}(bbls)^* =$

57.29 BARRELS

Estimated Reported Volume\*\*  $V_{rm}(bbls) =$  58 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 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 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]:
  - Shell Petroleum Development Company [SPDC]:
  - *Separate DPR form has been filled out with same findings*
- Tick as applicable*

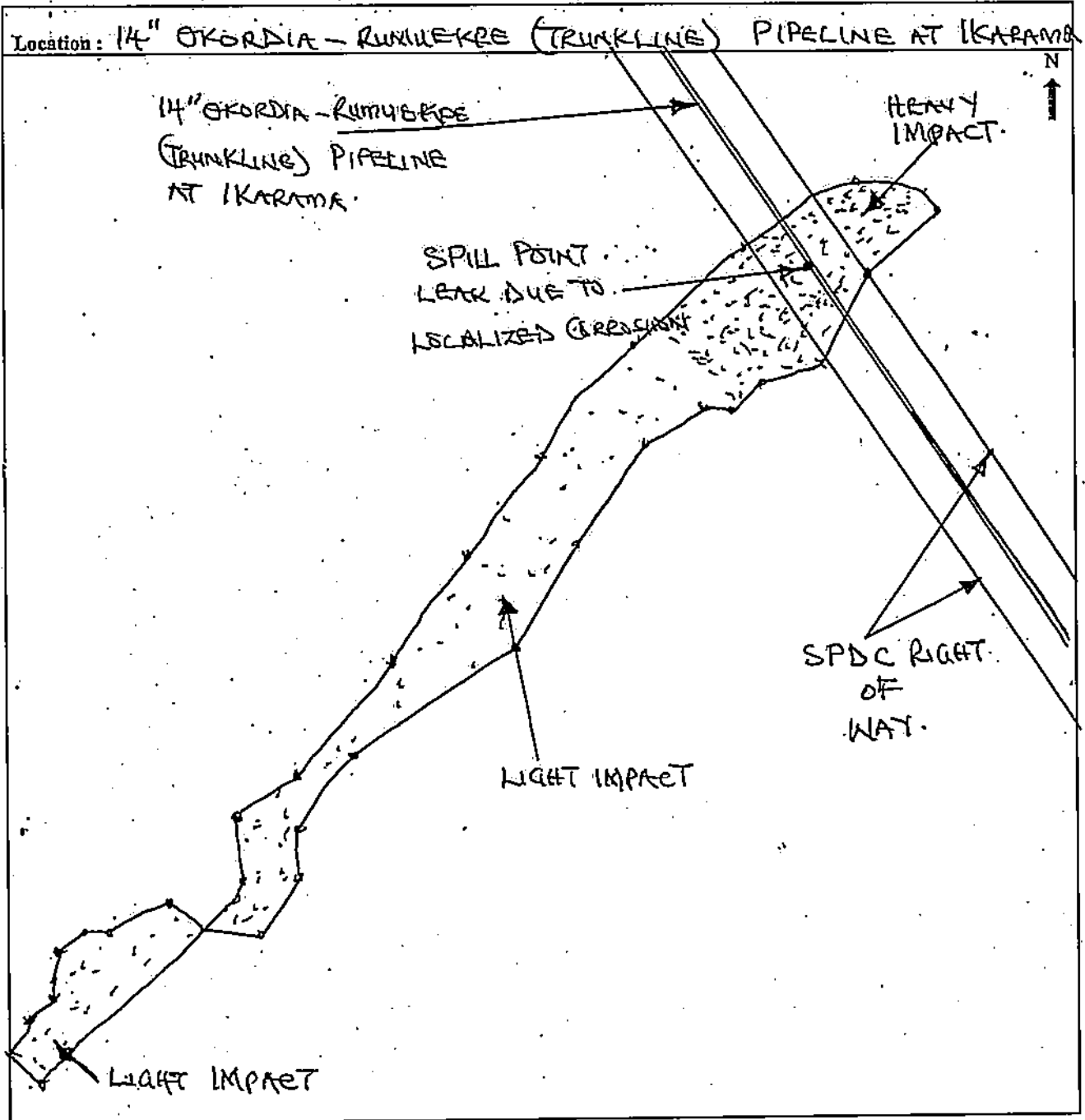
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f. Appendix d: Overview sketch of the site



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