

JOINT INVESTIGATION REPORT

INCIDENT NO: 2421807 JIV report S/N: 1030104

(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: 2421807 2. Type of incident* OIL SPILL
3. Name of Location 14th OKORDIA RUMUEKPE PIPELINE
4. Name of nearest community AKINIMA 5. State: RIVERS 6. LGA AHOADA-WEST
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: 7th AUGUST, 2019
b. Start date/time of investigation: 10th AUGUST, 2019 / 12th AUGUST 2019 / 13th AUGUST, 2019 /
c. Investigation End date: 13th AUGUST, 2019 Actual investigation duration, days: 3 DAYS
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

Additional observations around the spill point:

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 rd party equipment impact |
| <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) construction e) Encroachment f) Fire, g) non leaking Theft point removal
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g. Spill point coordinates
h. Measuring unit (KGS 84)

Northing: <u>LATITUDE</u>	Easting: <u>LONGITUDE</u>
<u>5.13107</u>	<u>6.47244</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 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] }
 [,m] } WITHIN VICINITY
 [,m] }
 [,m] }
 [,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 ACTIVITIES

15. Was there any disruption to the investigation?

[Y]

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If yes to item 15 give brief description:

NOT APPLICABLE

16. Was JIV delayed?

[Y] [N] X

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
<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>						

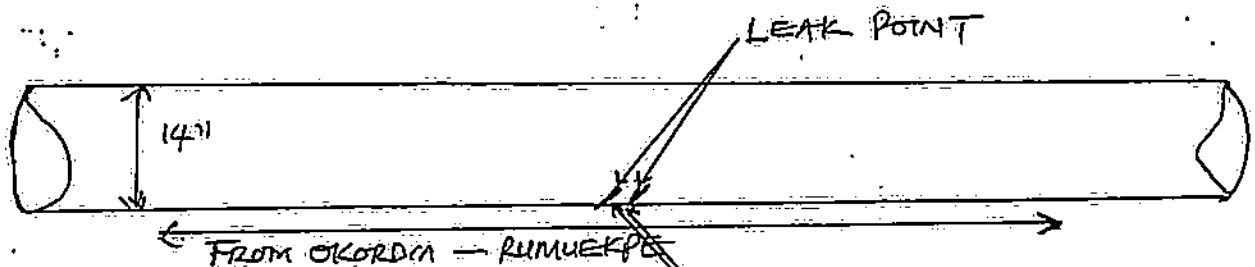
19. Fish/Nets/Ponds

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

20. Others (Specify) 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 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) A SECTION OF 14" OKORDIA - RUMUEKPE PIPELINE AT AKINIMA SHOWING 2 NUMBERS HACK SAW CUT FROM 5 O'CLOCK TO 6 O'CLOCK POSITION BY UNKNOWN PERSONS.



JIV ALONG 14"OKODIA RUMUEKPE PIPE LINE AT AKINIMA
INC.NO 2421807

PNT_ID	LAT	LONG
SP	5.13107	6.47244
1	05.13166	6.47179
2	5.13123	6.47164
3	5.13073	6.4715
4	5.13042	6.47152
5	5.13016	6.4712
6	5.1317	6.47189
7	5.13054	6.4729
8	5.1303	6.47309
9	5.13029	6.47309
10	5.13014	6.4732
11	5.12997	6.47317
12	5.12983	6.47314
13	5.12979	6.47299
14	5.12961	6.47307
15	5.12945	6.47327
16	5.13051	6.47321
17	5.13058	6.47321
18	5.13059	6.47314
19	5.13071	6.47309
20	5.13096	6.47316
21	5.13106	6.47316
22	5.13112	6.47294
23	5.13123	6.47272
24	5.13149	6.47282
25	5.13159	6.47249
26	5.13164	6.47237
27	5.13194	6.47231
28	5.13203	6.47222
30	5.13204	6.47208
31	5.13196	6.47196
32	5.13185	6.47185
33	5.13177	6.47178
34	5.13167	6.47187

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G. INCIDENT INFORMATION:

a. Impacted Area Details

- Total calculated area of impact 3.895022
- 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:

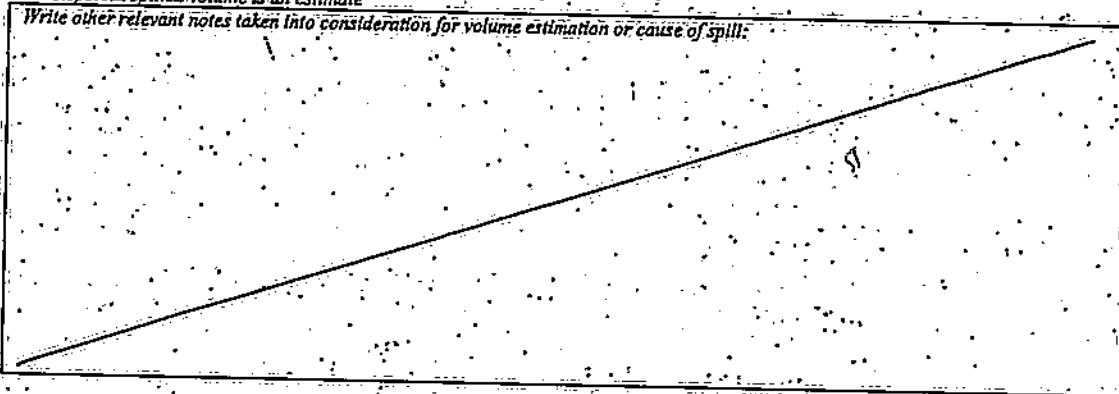
<u>NIL</u>	Barrels
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c. Net Estimated Spilled Volume V_{zi} (bbls)* =	<u>114.86 BARRELS</u>
Estimated Reported Volume** V_{rm} (bbls) =	<u>115 BARRELS</u>

***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 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 m³ to barrels is Volume (m³) 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:

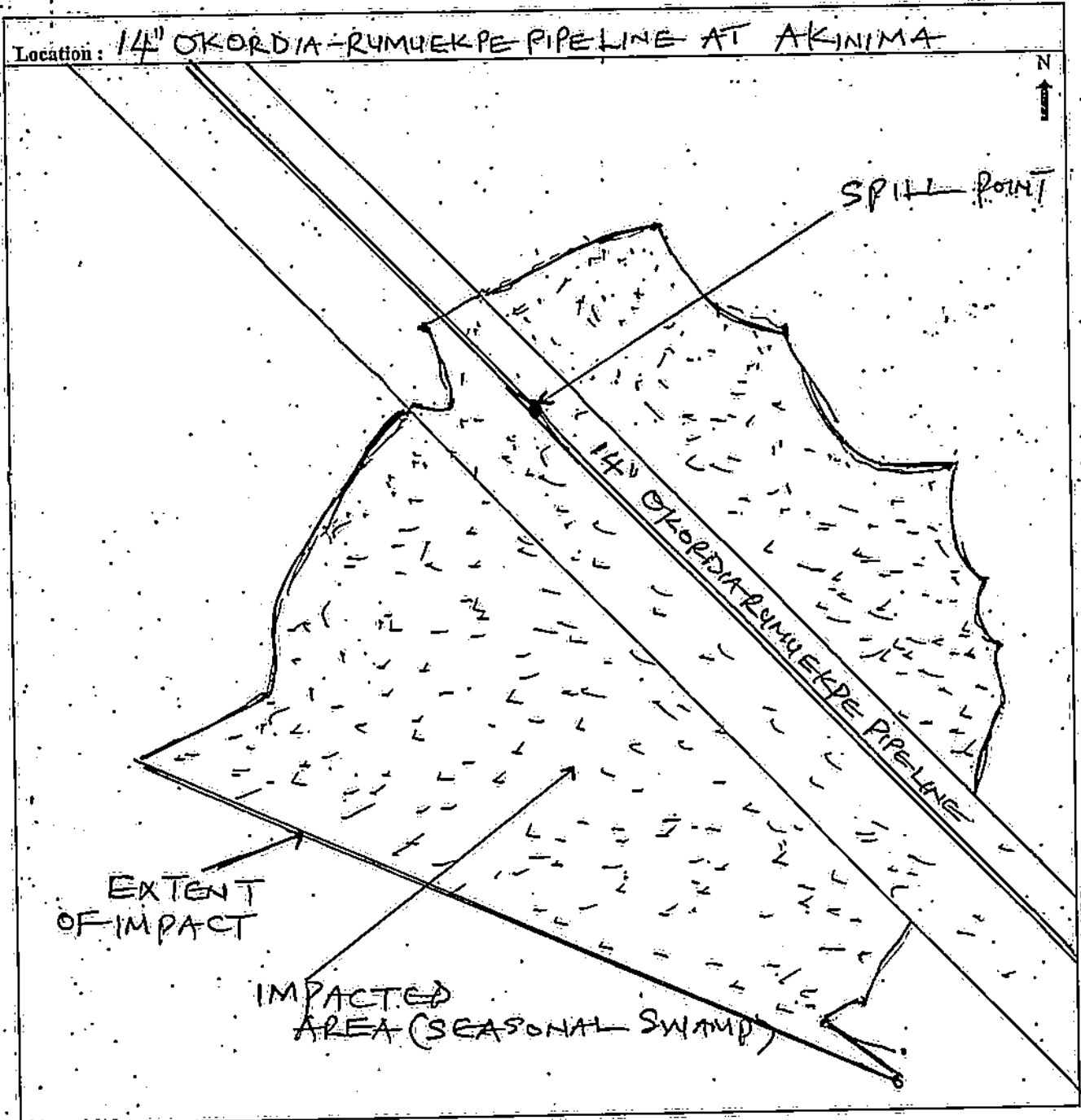
- Host Community:
- Department of Petroleum Resources [DPR]:
- National Oil Spill Detection and Response Agency [NOSDRA]:
- State Ministry of Environment [SME]:
- Shell Petroleum Development Company [SPDC]:
- *Separate DPR form has been filled out with same findings*:

Tick as applicable

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f. Appendix 1: Overview sketch of the site



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