

JOINT INVESTIGATION REPORT

INCIDENT NO: 2098739 JIV report S/N: 1080

(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: 2098739 2. Type of incident* OIL SPILL
3. Name of Location 14th OKORDIA - RUMUEKPE PIPELINE
4. Name of nearest community ULA-IKATA 5. State: RIVERS 6. LGA AHOADA - EAST
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 of incident: 13TH JUNE, 2018
b. Start date/time of investigation: 20TH JUNE, 2018 / 15:13 HOURS; 21ST JUNE, 2018
c. Investigation End date: 26TH JUNE, 2018 Actual investigation duration, days: THREE (3) DAYS
d. Description of spill point environment 2018

- | | | |
|---|--|---|
| <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: **A SECTION OF THE PIPELINE POLYETHYLENE COATING SURROUNDING THE SPILL POINT WAS NOTICED TO HAVE BEEN REMOVED BY UNKNOWN PERSON(S).**

c. 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 rd party equipment impact |
| <input type="checkbox"/> Corrosion | <input checked="" type="checkbox"/> Others(specify) <u>PUNCTURED HOLE</u> | |

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,

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g. Spill point coordinates

h. Measuring unit

Northing: <u>LATITUDE</u>	Easting: <u>LONGITUDE</u>
<u>5.05074</u>	<u>6.58352</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 from the nearest sensitive habitat

- Government reserved and designated protected area [,m]
- Drinking water source [,m]
- Built up area [,m]
- Farmlands [300 ,m]
- Fish Farm/pond [,m]
- Fishing net [,m]
- Others (specify).

12. Containment measures put in place;

Booms Trench Dyke Natural depression Pit None
 Others: BUND WALL

13. Any pictures or video coverage?

[Y] [N]

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

[Y] [N]

if yes to item 14, give brief description:

RECOVERY OF FREE-PHASE OIL WAS BEING DONE

15. Was there any disruption to the investigation?

[Y] [N]

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If yes to item 15 give brief description:

COMMUNITY MEMBERS DISRUPTED THE INVESTIGATION ON 21ST JUNE 2018 OVER ISSUES RELATING TO SURVEILLANCE CONTRACT INVESTIGATION LATER RESUMED ON 26TH JUNE 2018.

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
	NONE WITHIN AREA OF IMPACT					

18. Fishing Nets/Fish Ponds

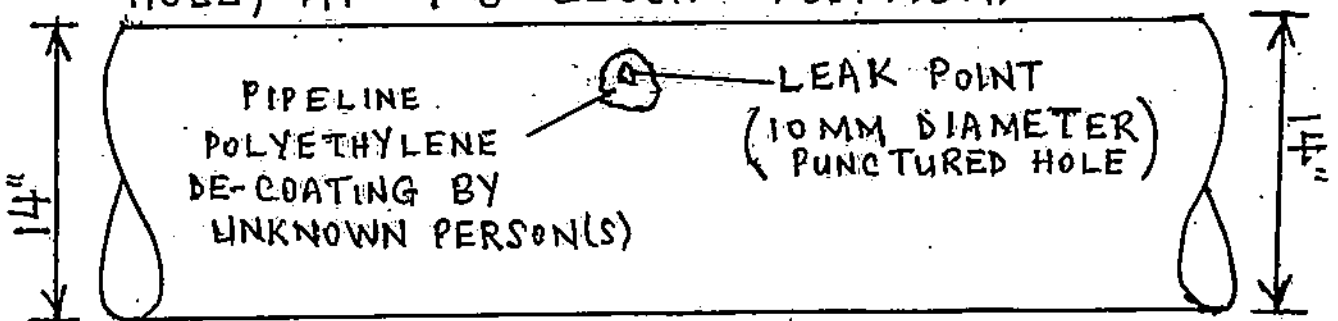
S/N	Nets/Ponds	Description	Quantity/Size	Comments
	NONE WITHIN AREA OF IMPACT			

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 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)

SECTION OF 14" OKORDIA - RUMUEKPE PIPELINE
AT ULA-IKATA SHOWING LEAK POINT (PUNCTURED
HOLE) AT 1 O' CLOCK POSITION.



FROM OKORDIA
TO RUMUEKPE

APPENDIX A**14" OKORDIA - RUMUEKPE PIPELINE AT ULA-IKATA****INCIDENT NO. 2098739****IMPACTED AREA COORDINATES (WGS 84)**

POINT ID	LATITUDE_Y	LONGITUDE_X
62	5.05171	6.58334
63	5.05172	6.58338
64	5.05176	6.5834
65	5.05185	6.58342
66	5.05195	6.58342
67	5.05194	6.58345
68	5.05201	6.58351
69	5.05201	6.58362
70	5.05205	6.58368
71	5.0521	6.58375
72	5.05197	6.58377
73	5.05205	6.58382
74	5.05207	6.58386
75	5.05203	6.58391
76	5.05198	6.58395
77	5.05199	6.58408
78	5.05204	6.58459
79	5.05203	6.58457
80	5.05203	6.5847
81	5.0521	6.58489
82	5.05203	6.5849
83	5.05195	6.58489
84	5.05189	6.58487
85	5.05184	6.58479
86	5.05178	6.58469
87	5.05165	6.58464
88	5.05158	6.58456
89	5.0515	6.58454
90	5.05137	6.58447
91	5.05132	6.58445
92	5.05115	6.58442
93	5.0511	6.58438
94	5.05099	6.5843
95	5.05093	6.58427
96	5.05076	6.58426
97	5.05071	6.58428
98	5.05068	6.58418
99	5.05067	6.58414
100	5.05058	6.58406
101	5.05047	6.58399
102	5.05046	6.58393
103	5.05041	6.58391
104	5.05038	6.58387
105	5.05039	6.58386
106	5.05036	6.58398

APPENDIX A (CONTINUED)

14" OKORDIA - RUMUEKPE PIPELINE AT ULA-IKATA

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IMPACTED AREA COORDINATES (WGS 84)

107	5.05028	6.58339
108	5.05042	6.58377
109	5.05055	6.58368
110	5.05064	6.58357
111	5.05063	6.58342
112	5.05062	6.58339
113	5.05065	6.58334
114	5.05068	6.58331
115	5.05081	6.58323
116	5.0509	6.58326
117	5.05105	6.58318
118	5.05118	6.58305
119	5.05124	6.58296
120	5.05136	6.58291
121	5.05136	6.58287
122	5.05145	6.58289
123	5.05214	6.58486

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G. INCIDENT INFORMATION:

a. Impacted Area Details

- Total calculated area of impact 2.33 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>141</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)* = 586.95

Estimated Reported Volume V_{rep} (bbls) = 587 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 estimating the spilled in the box below:

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 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 volume 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
- ii. Investigation of the incident site showed that there is residual impact on site requiring further works

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):
- Asset Owner:
- Signatories agree with reported findings:
- 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

