

JOINT INVESTIGATION REPORT

INCIDENT NO: 2403688 JIV report S/N: 1030048

(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: 2403688 2. Type of incident* OIL SPILL/FIRE INCIDENT
3. Name of Location: 10" DIEBU - NAN RIVER (DELIVERY LINE) PIPELINE
4. Name of nearest community ONYOMA & EKONNE 5. State: BAYELSA 6. LGA SOUTHERN IJAW
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: 18TH JULY, 2019: 12:30PM
b. Start date/time of investigation: 28TH JULY, 2019
c. Investigation End date: 28TH JULY 2019 Actual investigation duration, days: ONE 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 checked="" type="checkbox"/> Well Platform (on Water) | <input type="checkbox"/> Drill Rig | |

Additional observations around the spill point:

NOT APPLICABLE

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 rd party equipment impact |
| <input checked="" type="checkbox"/> Others(specify) <u>BOMB BLAST ON THE PIPE</u> | | |

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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JOINT INVESTIGATION REPORT

INCIDENT NO: 2403688 JIV report S/N: 1030048

g. Spill point coordinates

h. Measuring unit

Northing:	Easting:
4.74201N	6.10167E

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
 [,m] } VICINITY.
 [,m] }

12. Containment measures put in place;

- Booms
 Trench
 Dyke
 Natural depression
 Pit
 None
 Others: _____

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 AND REPAIR WORK ARE ON-GOING.

15. Was there any disruption to the investigation?

[Y] [N]

JOINT INVESTIGATION REPORT

INCIDENT NO: 2408688 JIV report S/N: 1030048

If yes to item 15 give brief description:

NOT APPLICABLE

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

If yes to item 16 give brief description: SECURITY TEAM SECURING INCIDENT AREA

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				

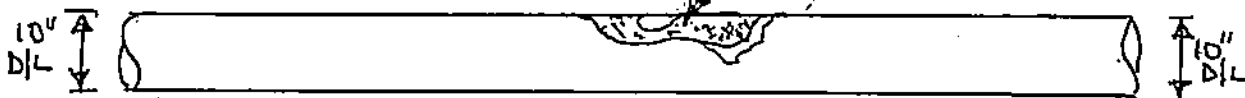
20. Others (Specify) i.e. Animal Traps

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 10" DIEBU CREEK - NUN RIVER PIPELINE (DELIVERY LINE)
PIPELINE AT ONYOKIA AND EKWE SHOWING: BOMB BLAST (THIRD PARTY INTERFERENCE)

LEAK DUE BOMB BLAST ON THE PIPE BY UNKNOWN PERSON(S)



DIEBU CREEK - NUN RIVER PIPELINE

Version 2019/01

JIV ALONG 14" DIEBU CREEK TO NUN RIVER AT ONYOMA/ENEWARI

PT_ID	Latitude	Longitude	
Spill point	4.74201	6.10167	
A	4.74232	6.10163	HEAVY IMPACT
B	4.74225	6.10173	HEAVY IMPACT
C	4.74187	6.10168	HEAVY IMPACT
D	4.74193	6.10158	HEAVY IMPACT
1	4.74217	6.10158	BURNT AREA
2	4.74237	6.10159	BURNT AREA
3	4.74248	6.10147	BURNT AREA
4	4.74253	6.10144	BURNT AREA
5	4.74258	6.1015	BURNT AREA
6	4.74253	6.10157	BURNT AREA
7	4.74252	6.10163	BURNT AREA
8	4.7427	6.10166	BURNT AREA
9	4.74269	6.10174	BURNT AREA
10	4.74263	6.1018	BURNT AREA
11	4.74248	6.10191	BURNT AREA
12	4.74238	6.10193	BURNT AREA
13	4.74224	6.10199	BURNT AREA
14	4.74214	6.10197	BURNT AREA
15	4.74206	6.10196	BURNT AREA
16	4.74198	6.10199	BURNT AREA
17	4.74195	6.10196	BURNT AREA
18	4.74198	6.10178	BURNT AREA
19	4.74193	6.10173	BURNT AREA
20	4.74173	6.10184	BURNT AREA
21	4.74165	6.10186	BURNT AREA
22	4.74154	6.1018	BURNT AREA
23	4.74144	6.10213	BURNT AREA
24	4.74107	6.10187	BURNT AREA
25	4.74108	6.10151	BURNT AREA
26	4.74108	6.10148	BURNT AREA
27	4.74134	6.10145	BURNT AREA
28	4.74139	6.10142	BURNT AREA
29	4.74133	6.10128	BURNT AREA
30	4.74155	6.10102	BURNT AREA
31	4.7416	6.10099	BURNT AREA
32	4.74159	6.10089	BURNT AREA
33	4.74238	6.10111	BURNT AREA
34	4.74238	6.10127	BURNT AREA

JOINT INVESTIGATION REPORT

INCIDENT NO: 2403688 JIV report S/N: 1030048

G. INCIDENT INFORMATION:

a. Impacted Area Details

- Total calculated area of impact 1.358209 Ha
- 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_{Est} (bbls)* =

187.45 BARRELS

Estimated Reported Volume** V_{rm} (bbls) =

188 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) \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.

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INCIDENT NO: 2403688 JIV report S/N: 1030048

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

<p>This report was <u>filled</u>, <u>agreed</u> and <u>signed</u> by the following joint investigation team representatives:</p> <ul style="list-style-type: none">• 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"/>• Shell Petroleum Development Company [SPDC]: <input checked="" type="checkbox"/>• <i>Separate DPR form has been filled out with same findings</i> <input checked="" type="checkbox"/> <p style="text-align: right;"><i>Tick as applicable</i></p>
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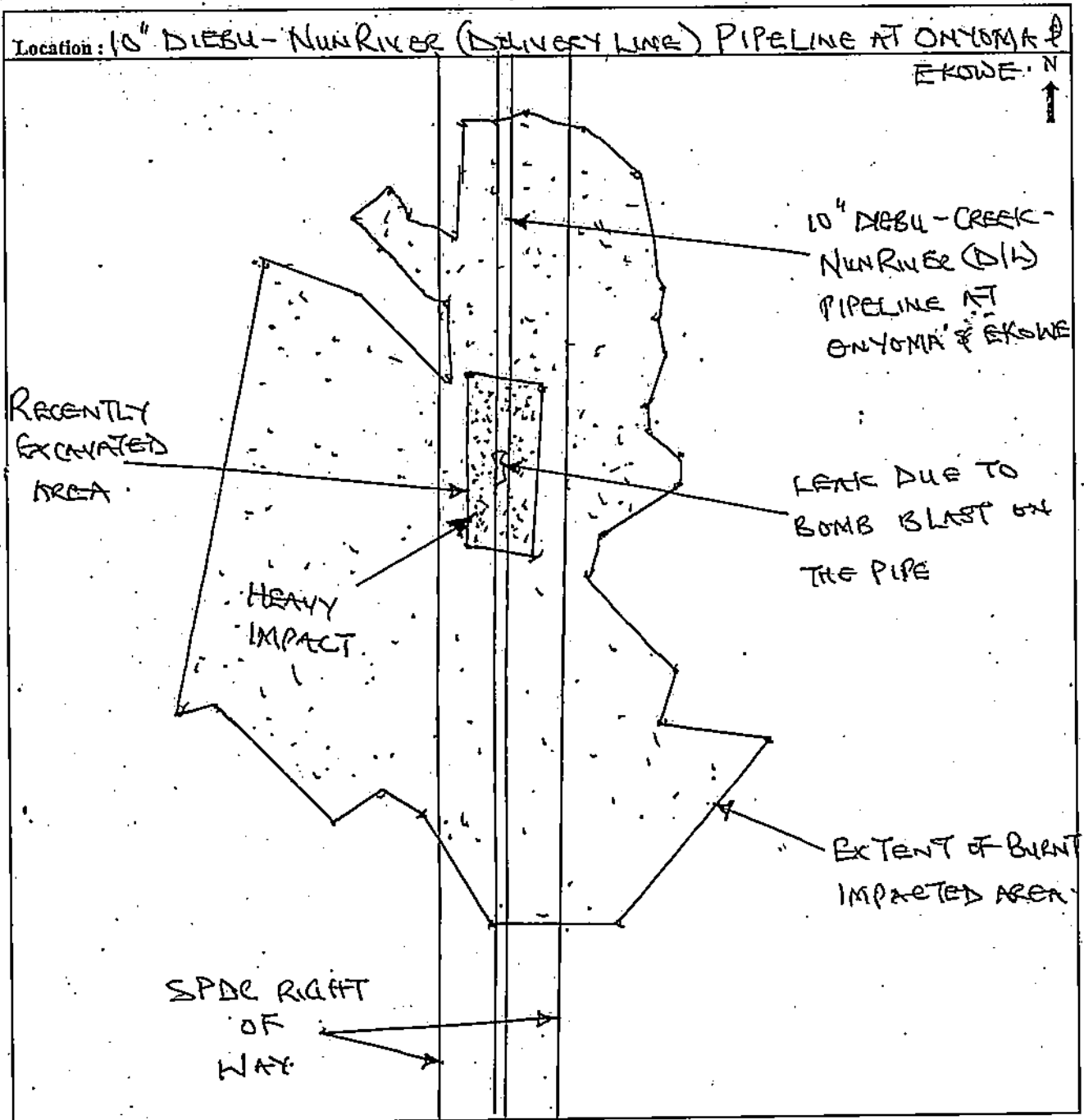
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f. Appendix 1: Overview sketch of the site



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