

JOINT INVESTIGATION REPORT

INCIDENT NO: 1448819 JIV report S/N: Nº 0000012

(Note: As practicable as possible the JIT report is to be signed in the field by all the participating parties)

A. GENERAL INFORMATION:

1. Spill incident Number: 1448819 2. Type of incident* OIL SPILL
3. Name of Location 20" KOLOCREEK - KUMUEKPE TRAN NIGER PIPELINE
4. Name of nearest community ODAY 5. State: RIVERS 6. LGA ABUA/ODUAL
7. Type of Production facility/Installation OIL PIPELINE
8. Asset owner/District THE SHELL PETROLEUM DEVELOPMENT COMPANY OF NIG LTD.

B. INCIDENT INFORMATION:

9. Details of incident
a. Date of incident: 24TH JULY, 2015
b. Start date/time of investigation: 28TH AUGUST, 2015
c. Investigation End date: 29TH AUGUST, 2015 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 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: THIS INCIDENT WAS INITIALLY REPORTED AS NON-LEAKING BUT NOTICES OF FRESH OIL IMPACT WAS OBSERVED BY THE RECOVERY TEAM WORKING ON AN OLD INCIDENT VERY CLOSE TO THIS INCIDENT FROM ON 22ND AUGUST, 2015. ONE ILLEGAL ATTACHMENT WAS FOUND ON THE FIRST DAY OF INVESTIGATION, WHILE ON THE SECOND DAY IT WAS FOUND REMOVED BY UNKNOWN PERSON.

- 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"/> 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) Situation d) construction e) Encroachment f) Fire.

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g. Spill point coordinates

h. Measuring unit

Northing: (LATITUDE)	Easting: (LONGITUDE)
4.92804	6.43558
 	
 	
 	

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

- | | | |
|---|---|---------------------------------------|
| <input type="checkbox"/> Government reserved and designated protected area
<input type="checkbox"/> Drinking water source
<input type="checkbox"/> Built up area
<input type="checkbox"/> Farmlands
<input type="checkbox"/> Fish Farm/Pond
<input type="checkbox"/> Fishing net
<input type="checkbox"/> Others (specify). | [.m]
[.m]
[.m]
[.m]
[.m] | } NONE SEEN
} WITHIN
} VICINITY |
|---|---|---------------------------------------|

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:

REPAIR WORK COMPLETED BY

CLAMPING

15. Was there any disruption to the investigation?

[Y] [N]

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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
NONE WITHIN AREA OF IMPACT						

18. Fishing Nets/Fish Ponds

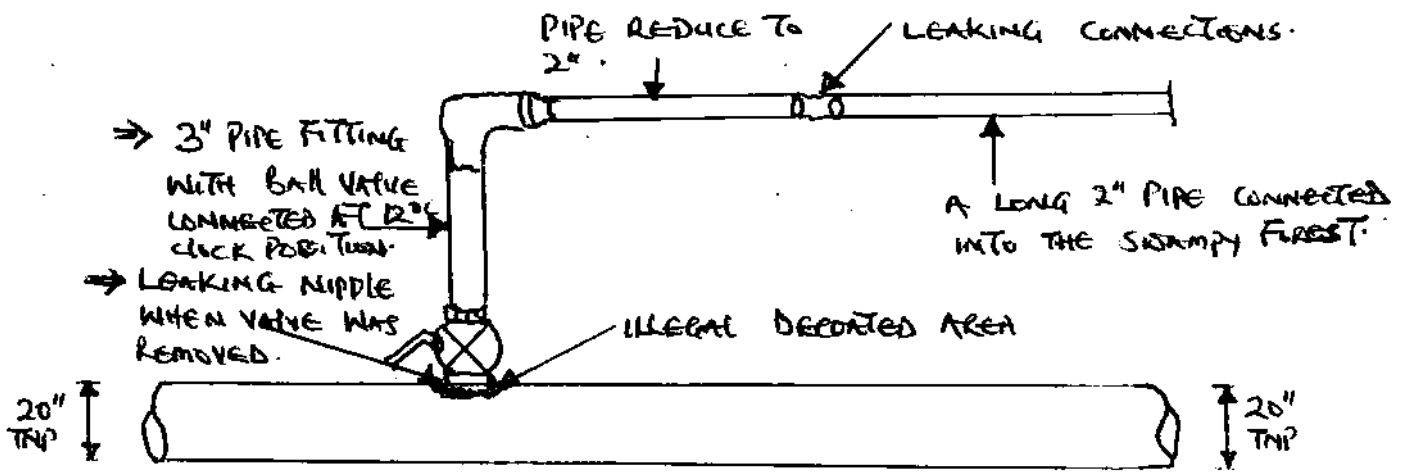
S/N	Nets/Ponds	Description	Quantity/Size	Comments
NONE WITHIN AREA OF IMPACT				

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)

SECTIONAL VIEW OF 20" KOLOCREEK - RUMUEKPE TRANS NIGER PIPELINE AT ODAY SHOWING FAILED WELD-ON ILLEGAL HOT TAP VALVE.



APPENDIX A

IMPACTED AREA COORDINATES

20" KOLO CREEK-RUMUEKPE TNP AT ABUA ODUAL

POINT	LATITUDE	LONGITUDE
15	6.4356	4.928
16	6.43556	4.928
17	6.43565	4.92808
18	6.43566	4.9281
19	6.43564	4.92813
20	6.43558	4.9281
21	6.43553	4.92809
22	6.43538	4.9281
23	6.43539	4.92801
24	6.4355	4.92803
25	6.43586	4.92822
26	6.43489	4.92807
27	6.43461	4.928
28	6.43585	4.92836
29	6.43568	4.92841
30	6.43546	4.92835
31	6.43513	4.92834
32	6.43499	4.92814
33	6.43482	4.92818
34	6.43478	4.92827
35	6.43471	4.92832
36	6.43465	4.92843
37	6.43471	4.92856
38	6.43478	4.92867
39	6.43488	4.92868
40	6.43488	4.92878
41	6.43463	4.9287
42	6.43452	4.92859
43	6.43445	4.92843
44	6.43445	4.92824
45	6.43417	4.92842
46	6.43402	4.92859
47	6.43381	4.92871
48	6.43364	4.92865
49	6.43364	4.92851
50	6.43382	4.92835
51	6.43384	4.92811
52	6.43367	4.92809
53	6.43347	4.92811
54	6.43338	4.92822
55	6.43333	4.92822
56	6.43331	4.92811
57	6.43303	4.92784
58	6.43301	4.927771
59	6.43306	4.92771
60	6.43326	4.92774



61	6.43408	4.92791
62	6.43412	4.92795
63	6.43562	4.92764
64	6.43632	4.92706
65	6.43709	4.92676
66	6.43765	4.92631
67	6.43793	4.92619
68	6.43813	4.92642
69	6.43766	4.92699
70	6.437	4.92711
71	6.43614	4.92761
72	6.43563	4.92779

A handwritten signature or scribble, possibly reading "P. J. G.", located in the lower right quadrant of the page.

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F: TABLE SHOWING SOME OF COORDINATES TAKEN DURING JIV FOR AREA CALCULATION

20. Impacted area boundary Coordinates (If more, Print and attach as an appendix)

S/N	Northing	Easting

SEE ATTACHED APPENDIX A

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G. INCIDENT INFORMATION:

a. Impacted Area Details

- Total calculated area of impact 2.50H9
- 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 $V_{ES}(bbls)^* =$

947.09 BARRELS

Estimated Reported Volume** $V_{rep}(bbls) =$

948 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:

THE IMPACTED AREA IN THE SWAMPY FOREST HAD CLEAR LINK TO THE SPILL POINT, FOLLOWING THE USED OF 2" PIPE CONNECTING THE THEFT POINT TO THE FOREST. BY UNKNOWN PERSONS.

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 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

