

JOINT INVESTIGATION REPORT

INCIDENT NO: 2537932 JIV report S/N: 1030193

(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: 2537932 2. Type of incident* OIL SPILL
3. Name of Location 8" NKALI - MORIVER 2 PIPELINE
4. Name of nearest community ODAGWA 5. State: RIVERS 6. LGA ETCHE
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: 27TH DECEMBER, 2019
b. Start date/time of investigation: 28TH DECEMBER, 2019 / 12:24 HRS
c. Investigation End date: 28TH DECEMBER, 2019 Actual investigation duration, days: ONE (1) DAY
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:

LEAK WAS OBSERVED FROM A HOLE DRILLED THROUGH A RECTANGULAR CUT SECTION OF BELT PLACED ON THE PIPELINE BY UNKNOWN PERSON(S).

e. Description of leak point (tick as applicable);

- | | | |
|---|---|--|
| <input checked="" 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"/> Others(specify) _____ | | |

f. Incident caused by:

- Third party interference (Sabotage ; crude theft ; Line theft ; Accidental 3rd party damage
 Operational Others (including Mystery spills) _____

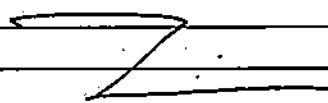
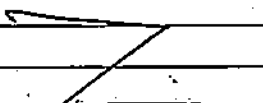
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g. Spill point coordinates

h. Measuring unit

WGS 84

Northing:	Easting:
4 986203	7.152853
	

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 [,m]
 - Drinking water source [,m]
 - Built up area [,m]
 - Farmlands [,m]
 - Fish Farm/Pond [,m]
 - Fishing net [,m]
 - Others (specify): [,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, RECOVERY ACTIVITIES ARE ONGOING.

15. Was there any disruption to the investigation? [Y] [N]

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If yes to item 15 give brief description:

NOT APPLICABLE

16. Was JIV delayed?

[X] NO

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	Quantity	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

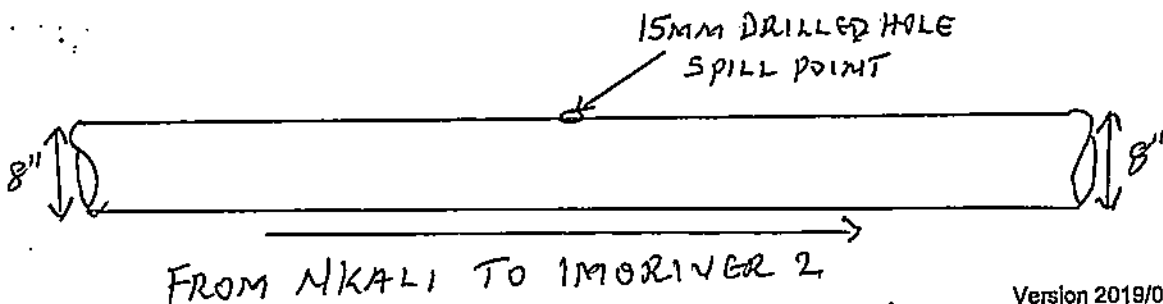
S/N	Fish/Nets/Ponds	Description	Quantity/Size	Comments
NONE WITHIN AREA OF IMPACT				

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)

SECTION OF 8" NKALI - IMORIVER 2 PIPELINE AT ODAGWA SHOWING DRILLED HOLE BY UNKNOWN PERSON'S AT 12 O'CLOCK POSITION.



Coordinate list for 8" Nkali -ImoRiver2 Pipeline at Odagwa(Inc.no=2537932)

WGS 84

PTS X(Eastings)Y(Northings)

36 7.152853 4.986203

37 7.15285 4.98612

38 7.15285 4.98618

39 7.15289 4.98619

40 7.15281 4.98621

41 7.15296 4.98622

42 7.1529 4.98615

44 7.15296 4.98623

45 7.15318 4.98622

46 7.15328 4.98624

48 7.15334 4.98624

49 7.15339 4.98623

50 7.15345 4.98624

51 7.15351 4.98625

55 7.15369 4.98626

56 7.1538 4.98628

57 7.15395 4.98628

58 7.154043 4.986279

59 7.15391 4.98627

60 7.15367 4.98624

61 7.15336 4.98622

62 7.15311 4.986205

Handwritten signature/initials

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G. INCIDENT INFORMATION:

a. Impacted Area Details

- Total calculated area of impact 0.0282 L_a
- Impact within SPDC R.O.W. YES
- Impact outside SPDC R.O.W. NO

b. Volume of oil recovered before completion of JIV (V_{rec}):

Recovered oil V_{rec} :	<u>3</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)* =

<u>11.82 BARRELS</u>
<u>12 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"/>

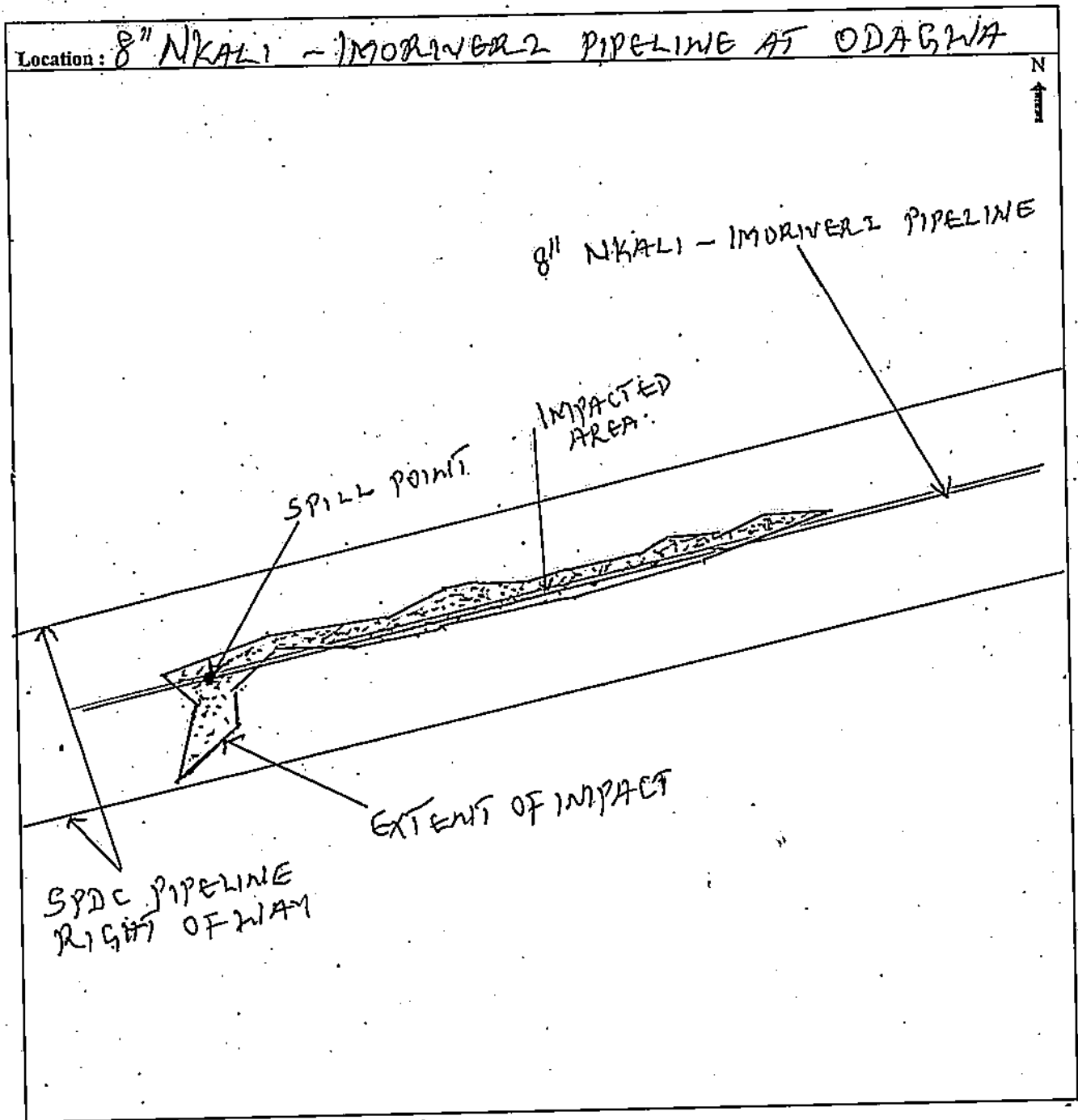
e. Representatives

This report was <u>filled</u> , <u>agreed</u> and <u>signed</u> by the following joint investigation team representatives:	
<input checked="" type="checkbox"/>	Host Community:
<input checked="" type="checkbox"/>	Department of Petroleum Resources [DPR]:
<input checked="" 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"/>	Separate DPR form has been filled out with same findings
	<i>Tick as applicable</i>

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f. Appendix 1: Overview sketch of the site



Version 2019/01

Distribution of copies: White (Asset Owner); Pink (DPR); Green (NOSDRA); Yellow (State Ministry of Environment); Blue (Host Community)