

JOINT INVESTIGATION REPORT

INCIDENT NO: 2677135 JIV report S/N: 0631

(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: 2677135 2. Type of incident* OIL SPILL
3. Name of Location 12" IMO RIVER - OGALE PIPELINE
4. Name of nearest community UMUOLOLO 5. State: ABIA 6. LGA UKWA WEST
7. Production Facility/Installation OIL PIPELINE
8. Asset Owner/Hub THE SHELL PETROLEUM DEVELOPMENT COMPANY OF NIGERIA LIMITED(SPOC)/ PIPELINE

B. INCIDENT INFORMATION:

9. Details of incident

- a. Date Reported: 30TH JUNE 2020
b. Start date/time of Investigation: 1ST JULY 2020/17:10HRS
c. Investigation End date: 1ST JULY 2020 Day(s) on site: ONE (1) 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 type="checkbox"/> Swampy | <input type="checkbox"/> Exposed pipe surface |
| <input type="checkbox"/> Well Platform (on water) | <input type="checkbox"/> Drill Rig | <input type="checkbox"/> Sand bag(s) |

Additional observations around the spill point:

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

- | | | |
|--------------------------------------------------------------------------------|-----------------------------------------------|----------------------------------------------------------------------------|
| <input type="checkbox"/> Smooth round-edge hole | <input type="checkbox"/> Rough-edge hole | <input type="checkbox"/> Hack saw cut |
| <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 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"/> Tear (_____) | | |
| <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) Water Leak (e) Fire (f) Non-leaking theft point removal

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g. Spill Point Coordinates (*Incidents <100m apart to be aggregated into one Joint Investigation Report)

h. Measuring unit WGS 84

Northing:	Easting:
<u>4.93851</u>	<u>7.18472</u>

C. RISK ASSESSMENT

10. Details of Environment

i. Type of environment where spill occurred (select one):

- Land
 Swamp
 Water
 Seasonal swamp
 Shoreline/Waterfront

ii. Type of environment to which oil has spread:

- Land
 Swamp
 Waterbody (specify) _____

iii. Weather condition

- Dry
 Wet
 Windy
 Hot

11. Distance to Sensitive habitat within 100m radius

- Government reserved and designated protected area [,m]
 Drinking water source [,m]
 Surface water Borehole
 Built up Area [10 ,m]
 Residential Area Commercial/Industrial Area
 Farmlands [,m]
 Fish Farm/Pond [,m]
 Fishing net [,m]
 Others (specify) _____ [,m]

12. Containment measures put in place:

- Booms
 Trench
 Dyke
 Pit
 Natural depression
 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:

REPAIRS BY CLAMPING

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

If yes to item 15 give brief description:

NOT APPLICABLE

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

Reason(s):

- Delayed Community Access Approval
 Security Challenges
 Access constraint due to terrain
 Others (specify) _____

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
	BUILDING	UNCOMPLETED	2-	2	IMPACTED

18. Crops/Economic Trees

S/N	Type of crops	Young	Medium	Matured	Quantity	Comments
	NONE WITHIN AREA OF IMPACT					

19. Fish/Nets/Ponds

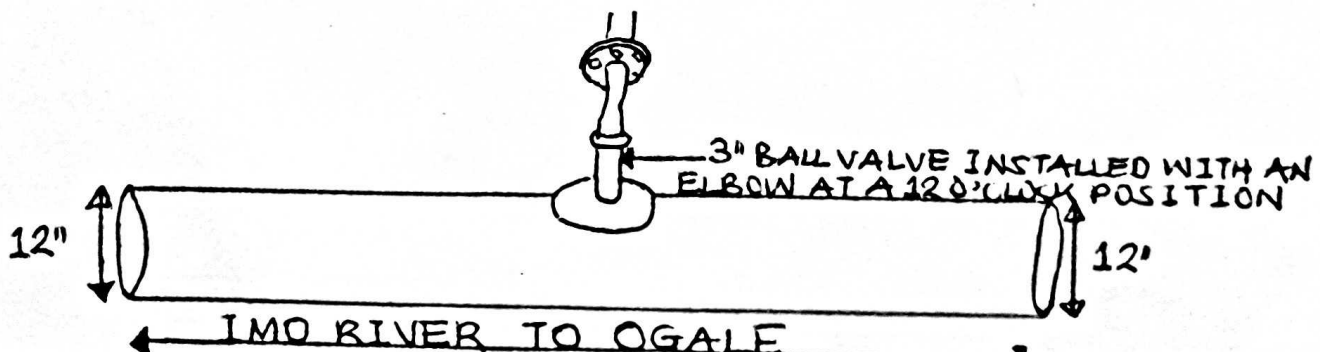
S/N	Fish/Nets/Ponds	Description	Quantity/Size	Comments
	NONE WITHIN AREA OF IMPACT			

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

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

E. GRAPHIC DESCRIPTION OF LEAK POINT *(while detailed description of the leak point should be contained in the leak report, overview sketch of the site should be added as appendix 1)*

A SECTION OF 12" IMR RIVER - OGALE PIPELINE AT UMUOLOLO SHOWING A 3" BALL VALVE INSTALLED WITH AN ELBOW AT A 12 O'CLOCK POSITION BY UNKNOWN PERSON(S)



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

21. Impacted area boundary Coordinates (If more, Print and attach as Appendix)

SN	Northing	Easting
1	4.93872	7.18469
2	4.93864	7.18470
3	4.93860	7.18471
4	4.93855	7.18472
5	4.93849	7.18474
6	4.93844	7.18462
7	4.93850	7.18465
8	4.93851	7.18454
9	4.93855	7.18450
10	4.93858	7.18454
11	4.93854	7.18457
12	4.93854	7.18466
13	4.93872	7.18467

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G. INCIDENT INFORMATION:

a. Impacted Area Details *

- Total calculated area of impact (Ha) 0.024 Ha
- Impact within SPDC R.O.W YES
- Impact outside SPDC R.O.W YES

* Round off to 2 decimal places if area is $\geq 100 \text{ m}^2$ or to 4 decimal places if area is $< 100 \text{ m}^2$ (e.g. 14.55, 0.0051, 0.0009)
* Express in Hectares (Ha)

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

Re covered oil V_{rec} : NIL Barrels

Controlled recovery/evacuation from source with no impact to environment:

NIL Barrels

c. Net Estimated Spilled Volume V_{est} (bbls)* = 1.83 BARRELS

Estimated Reported Volume** V_{rep} (bbls) = 2 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.

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 $\text{Volume (m}^3) \times 6.29$; **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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- 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]:
- The Shell Petroleum Development Company [SPDC]:
- Separate DPR form has been filled out with same findings
- Separate NOSDRA form has been filled out with same findings
- Separate SME form has been filled out with same findings

Tick as applicable

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f. Appendix 1: Overview sketch of the site

