

JOINT INVESTIGATION REPORT

INCIDENT NO: 2828645 JIV report S/N:

0747

(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: 2828645 2. Type of incident* OIL SPILL
3. Name of Location 18" ASSA - RUMUEKPE PIPELINE
4. Name of nearest community UBUBO OCHI State: IMO 6. LGA OHAJI - EGBEMA
7. Production Facility/Installation CRUDE OIL PIPELINE
8. Asset Owner/Hub THE SHELL PETROLEUM DEVELOPMENT COMPANY
OF NIGERIA LIMITED / PIPELINE

B. INCIDENT INFORMATION:

9. Details of incident
a. Date Reported: 08TH JANUARY 2021
b. Start date/time of Investigation: 09TH JANUARY 2021 / 1048HRS
c. Investigation End date: 09TH JANUARY 2021 Day(s) on site: ONE 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 Sand bag(s)

Additional observations around the spill point:

NOT APPLICABLE

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 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"/> 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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Version 2020/01

JOINT INVESTIGATION REPORT

INCIDENT NO: 2828645 JIV report S/N: 0747

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

h. Measuring unit

NGS 84

Northing:	Easting:
<u>5 35520</u>	<u>6 79677</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 [MIL ,m]
 Drinking water source [MIL ,m]
 Surface water Borehole
 Built up Area [MIL ,m]
 Residential Area Commercial/Industrial Area
 Farmlands NOT IMPACTED [10 ,m]
 Fish Farm/Pond [MIL ,m]
 Fishing net [MIL ,m]
 Others (specify) _____ [MIL ,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:

REPAIR BY CLAMPING COMPLETED.
RECOVERY ACTIVITIES ONGOING.

JOINT INVESTIGATION REPORT

INCIDENT NO: 2828645 JIV report S/N: 0747

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

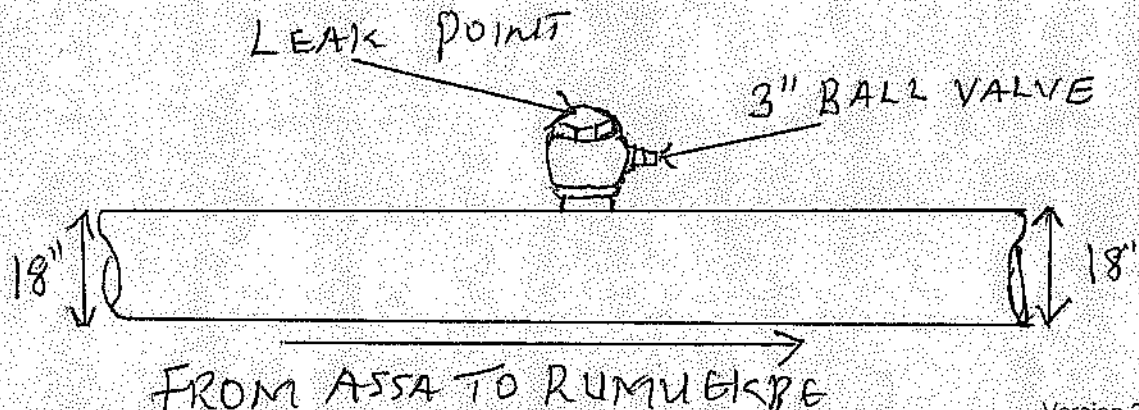
S/N	Fish/Nets/Ponds	Description	Quantity/Size	Comments
NONE WITHIN AREA OF IMPACT				

20. Others (Specify) 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)

SECTION OF 18" ASSA - RUMUEKPE PIPELINE AT UBUBO OCHIA SHOWING CRUDE OIL THEFT POINT INSTALLED AT 12 O'CLOCK POSITION BY UNKNOWN PERSONS.



JOINT INVESTIGATION REPORT

INCIDENT NO: 2828645 JIV report S/N: 0747

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

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

S/N	Northing	Easting

SEE THE ATTACHED
2013

JIV along 18" Assa to Rumuekpe Pipeline at Ochia

PNT_ISD	LAT	LONG	PNT_ISD	LAT	LONG
39	5.3554	6.79677	76	5.35486	6.79579
40	5.35539	6.79684	77	5.35487	6.79552
41	5.35549	6.79686	78	5.35485	6.79522
42	5.35551	6.79689	79	5.35485	6.79505
43	5.35558	6.79697	80	5.35487	6.79487
44	5.35563	6.79698	81	5.35488	6.79495
45	5.35564	6.79698	82	5.35487	6.79506
46	5.35572	6.797	83	5.35489	6.79528
47	5.35577	6.79701	84	5.35493	6.79541
48	5.35577	6.79702	85	5.35491	6.7955
49	5.35565	6.79701	86	5.35491	6.79576
50	5.35553	6.79698	87	5.35491	6.79601
51	5.35551	6.79688	88	5.35497	6.79595
52	5.3549	6.79683	89	5.35498	6.79602
53	5.3549	6.79702	90	5.35493	6.79604
54	5.35491	6.7973	91	5.35491	6.79616
55	5.35492	6.79732	92	5.35493	6.7964
56	5.35497	6.79732	93	5.35493	6.79653
57	5.35494	6.79734	94	5.35492	6.79676
58	5.35491	6.79733	95	5.35506	6.79682
59	5.35493	6.79765	96	5.35504	6.79676
60	5.35493	6.798	97	5.35504	6.79673
61	5.35494	6.79812	98	5.35508	6.79669
62	5.35492	6.7981	SP	5.3552	6.79677
63	5.35492	6.79804			
64	5.35489	6.79793			
65	5.35488	6.7968			
66	5.35457	6.79675			
67	5.35458	6.79673			
68	5.35462	6.79675			
69	5.35464	6.79675			
70	5.3548	6.79677			
71	5.35485	6.79678			
72	5.35485	6.79672			
73	5.35488	6.79646			
74	5.35487	6.79621			
75	5.35487	6.79601			
76	5.35486	6.79579			
77	5.35487	6.79552			
78	5.35485	6.79522			
79	5.35485	6.79505			
80	5.35487	6.79487			
81	5.35488	6.79495			
82	5.35487	6.79506			
83	5.35489	6.79528			
84	5.35493	6.79541			
85	5.35491	6.7955			
86	5.35491	6.79576			
87	5.35491	6.79601			
88	5.35497	6.79595			
89	5.35498	6.79602			
90	5.35493	6.79604			
91	5.35491	6.79616			
92	5.35493	6.7964			
93	5.35493	6.79653			
94	5.35492	6.79676			
95	5.35506	6.79682			
96	5.35504	6.79676			
97	5.35504	6.79673			
98	5.35508	6.79669			

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JOINT INVESTIGATION REPORT

INCIDENT NO: 2828645 JIV report S/N: 0747

G. INCIDENT INFORMATION:

a. Impacted Area Details *

- Total calculated area of impact (Ha) 0.28 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}):

Recovered oil V_{rec} :	<u>56</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)* =

443.11 BARRELS

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

444 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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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]:
- 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

