

JOINT INVESTIGATION REPORT

INCIDENT NO: 2864074 JIV report S/N: 0000778

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

A. GENERAL INFORMATION:

1. Fountain Incident Number: 2864074 2. Type of incident* OIL SPILL
3. Name of Location 16" EGBEMA - ASSA PIPELINE
4. Name of nearest community OBIAKPU 5. State: IMO 6. LGA OHAJI - EGBEMA
7. Production Facility/Installation 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: 18th FEBRUARY 2021
b. Start date/time of Investigation: 20th FEBRUARY 2021 / 10:30 HRS
c. Investigation End date: 20th FEBRUARY 2021 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 checked="" type="checkbox"/> Swampy ^{SEASONAL} | <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:

BURNT AREA WAS OBSERVED.

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

Version 2020/01

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

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

h. Measuring unit

KGS 84

Northing: LATITUDE	Easting: LONGITUDE
5.52943	6.76023

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:

SEASONAL

- 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 [,m]
 - Residential Area Commercial/Industrial Area
- 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
 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:

CRUDE OIL RECOVERY AND REPAIR ACTIVITIES ARE ONGOING.

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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
<u>NONE WITHIN AREA OF IMPACT</u>					

18. Crops/Economic Trees

S/N	Type of crops	Young	Medium	Matured	Quantity	Comments
<u>1</u>	<u>PALM/TREE</u>	<u>————</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<u>FEW</u>	<u>Burnt</u>

19. Fish/Nets/Ponds

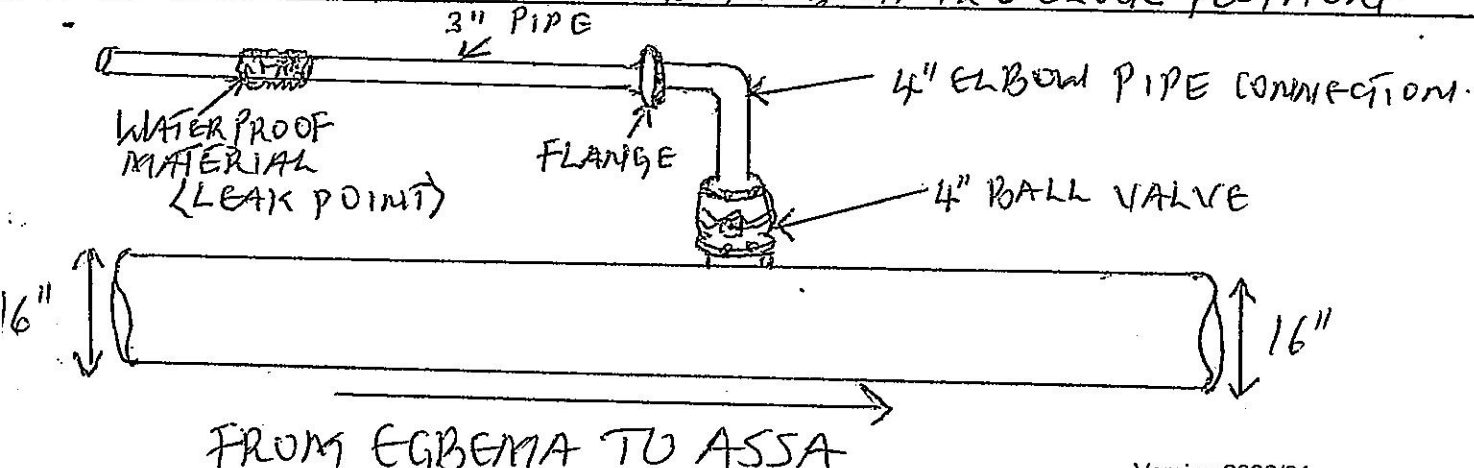
S/N	Fish/Nets/Ponds	Description	Quantity/Size	Comments
<u>NONE WITHIN AREA OF IMPACT</u>				

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

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

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 16" EGBEMA-ASSA PIPELINE AT OBIAKPU SHOWING CRUDE OIL THEFT POINT INSTALLED AT 12 O'LOCK POSITION.

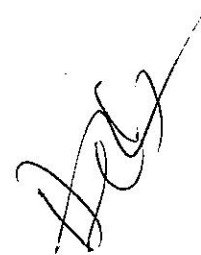


APPENDIX A

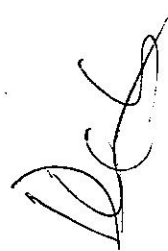
INCIDENT NUMBER: 2864074
 16" ERBEMA-ACSA PIPELINE AT OBLAKPU
 WAS 84

POINT Sp	LONGITUDE	LATITUDE
	6.76023	5.52943
3	6.76017	5.52948
4	6.76024	5.52947
5	6.76027	5.52961
6	6.76023	5.52961
7	6.76021	5.52962
8	6.76022	5.52963
9	6.76027	5.52963
10	6.76027	5.52966
11	6.76024	5.52968
12	6.76021	5.52969
13	6.76021	5.5297
14	6.76027	5.52968
15	6.7603	5.52983
16	6.76031	5.53
17	6.7603	5.52995
18	6.76029	5.5298
19	6.76028	5.52987
20	6.76025	5.52988
21	6.76027	5.53001
22	6.76027	5.53023
23	6.76021	5.53006
24	6.76025	5.53002
25	6.76023	5.53
26	6.76022	5.53003
27	6.76019	5.53
28	6.76022	5.52998
29	6.76021	5.52991
30	6.76018	5.5299
31	6.76019	5.52994
32	6.76016	5.53001
33	6.7602	5.53006
34	6.76019	5.53008
35	6.76016	5.53006
36	6.76015	5.53005
37	6.76013	5.53011
38	6.76008	5.53008
39	6.76006	5.53009
40	6.76008	5.53013
41	6.76005	5.53015
42	6.76004	5.53011
43	6.76004	5.53011
44	6.76	5.53009
45	6.75999	5.53012
46	6.76003	5.53015

47	6.75998	5.53016
48	6.75997	5.5302
49	6.76005	5.53019
50	6.76005	5.53016
51	6.76009	5.53016
52	6.76008	5.53019
53	6.76016	5.53018
54	6.76015	5.53023
55	6.76022	5.53028
56	6.76022	5.53033
57	6.76023	5.53035
58	6.76019	5.53037
59	6.76017	5.53032
60	6.76013	5.53033
61	6.76014	5.53035
62	6.76017	5.53038
63	6.76015	5.53041
64	6.76016	5.53042
65	6.76018	5.53039
66	6.76026	5.53042
67	6.76028	5.53042
68	6.76026	5.53033
69	6.76032	5.53048
70	6.76039	5.53053
71	6.76047	5.53056
72	6.76048	5.53045
73	6.76041	5.53018
74	6.76036	5.53017
75	6.76034	5.52992
76	6.76034	5.52969
77	6.76031	5.5295
78	6.76032	5.52933
79	6.76046	5.52941
80	6.76052	5.52941
81	6.76053	5.5294
82	6.76046	5.52928
83	6.76049	5.52921
84	6.76063	5.52919
85	6.76078	5.52903
86	6.7608	5.52892
87	6.7608	5.52889
88	6.76084	5.52889
89	6.76079	5.52881
90	6.76085	5.52876
91	6.76084	5.52876
92	6.76076	5.52883



93	6.76078	5.52891
94	6.76072	5.5289
95	6.76071	5.52883
96	6.76074	5.52882
97	6.76062	5.52883
98	6.76059	5.52872
99	6.76047	5.52863
100	6.76045	5.52854
101	6.76028	5.52859
102	6.76029	5.52881
103	6.76025	5.52868
104	6.76018	5.52859
105	6.76016	5.5286
106	6.76016	5.52886
107	6.76009	5.52894
108	6.7598	5.52883
109	6.75956	5.52883
110	6.75937	5.52892
111	6.75938	5.52894
112	6.75957	5.52887
113	6.75964	5.52898
114	6.75958	5.52901
115	6.7596	5.52909
116	6.7596	5.52913
117	6.75969	5.52915
118	6.75969	5.52918
119	6.75965	5.5292
120	6.75966	5.52921
121	6.75982	5.52918
122	6.75982	5.52916
123	6.75971	5.52916
124	6.75969	5.52911
125	6.75972	5.5291
126	6.75967	5.52901
127	6.75977	5.52899
128	6.75976	5.52896
129	6.75967	5.52897
130	6.75966	5.52888
131	6.75981	5.52885
132	6.76014	5.52897



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G. INCIDENT INFORMATION:

a. Impacted Area Details *

- Total calculated area of impact (Ha) 0.73 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>1</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)* =

15.22 BARRELS

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

16 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 <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 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

