

JOINT INVESTIGATION REPORT

INCIDENT NO: 2162391 JIV report S/N: 0084

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

A. GENERAL INFORMATION:

- 1. Spill incident Number: 2162391 2. Type of incident* OIL SPILL
- 3. Name of Location 16" EGBENIA - ASSA (TRUNKLINE) PIPELINE
- 4. Name of nearest community ASSA 5. State: IMO 6. LGA OTAJI EGBEMA
- 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 of incident: 15TH SEPTEMBER, 2018
- b. Start date/time of investigation: 17TH SEPTEMBER, 2018
- c. Investigation End date: 18TH SEPT, 2018 Actual investigation duration, days: TWO (2) 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 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:
THE JOINT INVESTIGATION TEAM OBSERVED EVIDENCE OF SAND BAGS USED TO CONCEALED THE THEFT POINTS.

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"/> Corrosion | <input type="checkbox"/> Others(specify) _____ | |

f. Incident caused by:

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

**This can be: a) Oil/Spill b) Drilling fluid/Chemical c) Siltation d) construction e) Encroachment f) Fire. Version 2018/01
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g. Spill point coordinates

(WGS 84)

Measuring unit	Easting:
Northing: <u>LATITUDE</u> <u>5:39303 Nm</u>	<u>LONGITUDE</u> <u>6:79084 Em</u>
/	/
/	/

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

- Government reserved and designated protected area
- Drinking water source
- Built up area
- Farmlands
- Fish Farm/Pond
- Fishing net
- Others (specify).

}

[,m] } NONE SEEN
 [,m] } WITHIN
 [,m] } VICINITY.
 [,m] }
 [,m] }

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:

RECOVERY WORK AND REPAIR WORK BY CLAMPING COMMENCE
AND ARE ON - GOING.

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

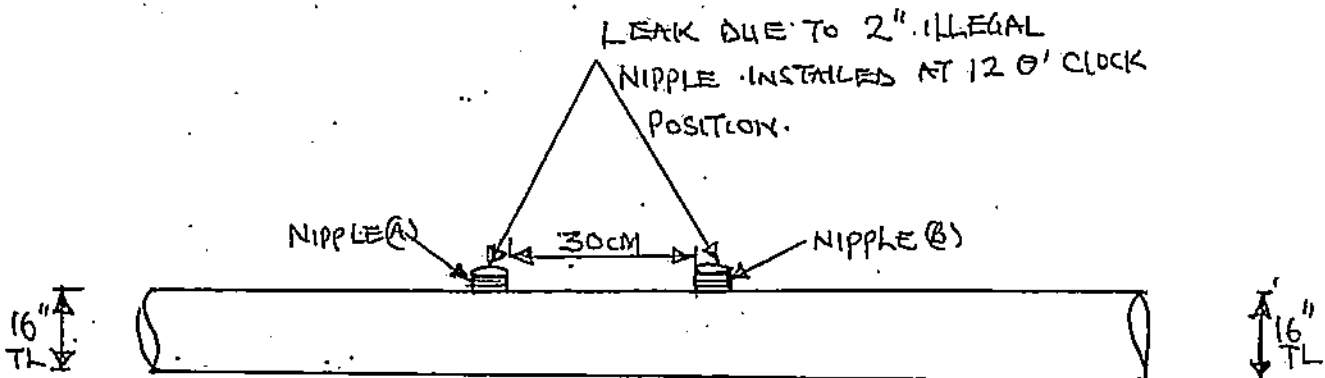
S/N	Nets/Ponds	Description	Quantity/Size	Comments
	NONE WITHIN AREA OF IMPACT			

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 detailed 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 16" EGBEMA - ASSA (TRUNKLINE) PIPELINE AT ASSA SHOWING: - TWO (2) NO OF 2" ILLEGAL NIPPLE INSTALLED AT 12 O' CLOCK POSITION BY UNKNOWN PERSON (S)



EGBEMA - ASSA PIPELINE

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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 ABSOLUTE COORDINATES

PT_ID	LAT_Y	LONG_X
800	5.39303	6.79084
804	5.39286	6.79096
805	5.39286	6.79093
806	5.39293	6.7909
807	5.39296	6.79085
808	5.39299	6.79082
809	5.39293	6.79078
810	5.39292	6.79075
811	5.39293	6.79077
812	5.39307	6.79071
815	5.39312	6.79068
816	5.39315	6.79077
817	5.39319	6.79076
818	5.39344	6.79066
819	5.39363	6.7906
820	5.39367	6.79057
821	5.39378	6.79051
822	5.39404	6.7904
823	5.39406	6.79037
824	5.3941	6.79031
826	5.39412	6.79032
828	5.39418	6.79031
831	5.39434	6.79024
832	5.39433	6.79019
834	5.39442	6.79021
835	5.39444	6.79021
836	5.39458	6.79028
838	5.39449	6.79031
842	5.39431	6.79037
844	5.39404	6.79046
845	5.39381	6.79054
846	5.39369	6.79062
847	5.39356	6.79069
848	5.39338	6.79075
849	5.3931	6.79087
850	5.39303	6.79088

PT_ID	LAT_Y	LONG_X
801	5.3931	6.79079
802	5.39299	6.79083
803	5.39295	6.79089
825	5.39412	6.79034
827	5.39415	6.79033
829	5.39422	6.79028
830	5.39429	6.79027
833	5.3944	6.79025
837	5.39451	6.79032
839	5.39435	6.79036
840	5.39433	6.79035
841	5.3943	6.79035

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G. INCIDENT INFORMATION:

a. Impacted Area Details

- Total calculated area of impact 1.228 Ha
- Impact within R.O.W YES
- Impact outside R.O.W NO

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

Recovered oil: V_{rec} :	<u>9</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. <u>Net Estimated Spilled Volume V_{est} (bbls) =</u>	<u>33.55 BARRELS</u>
<u>Estimated Reported Volume** V_{rep} (bbls) =</u>	<u>34 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 estimating the spilled volume in the box below:

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 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 <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

<p>This report was filled, agreed and signed by the following joint investigation team representatives:</p> <ul style="list-style-type: none">• 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"/>• Asset Owner: <input checked="" type="checkbox"/>• Signatories agree with reported findings: <input checked="" type="checkbox"/>• Separate DPR form has been filled out with same findings <input type="checkbox"/> <p style="text-align: right;"><i>Tick as applicable</i></p>

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f. Appendix 1: Overview sketch of the site

