

JOINT INVESTIGATION REPORT

INCIDENT NO: 2145557 JIV report S/N: 0078

(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: 2145557 2. Type of incident* OIL SPILL
3. Name of Location 20" KOLD CREEK - RUMUWERE PIPELINE
4. Name of nearest community ODAU 5. State: RWBS 6. LGA AGUA - ODUAL
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: 20TH AUGUST, 2018
b. Start date/time of investigation: 2ND SEPTEMBER, 2018 / 12:00HRS
c. Investigation End date: 3RD SEPTEMBER, 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 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 ILLEGAL CONNECTION OF A 1" GALVANIZED PIPE INDICATING CRUDE OIL THEFT.

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 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

Measuring unit WGS 84

Northing: <u>LATITUDE</u>	Easting: <u>LONGITUDE</u>
<u>4.93854</u>	<u>6.50009</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): _____

Nil, m)
 Nil, m)
 Nil, m)
 Nil, m)
 Nil, m)
 None, 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 AND REPAIR 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

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

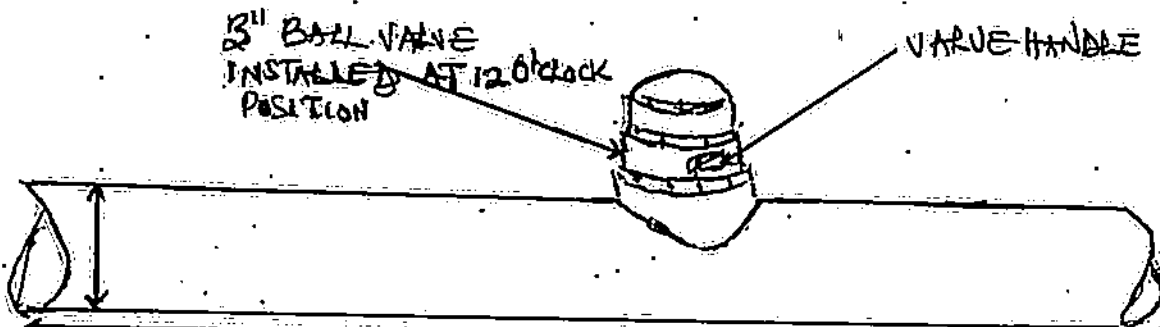
S/N	Nets/Ponds	Description	Quantity/Size	Comments
	NONE WITHIN AREA OF IMPACT			

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) A SECTION SHOWING

20" KOLOCREEK - RUMUEKE PIPELINE AT ODAU WITH A 3" BALL VALVE INSTALLED AT 12 O'CLOCK POSITION BY UNKNOWN PERSONS.

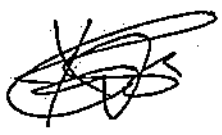


FROM KOLOCREEK TO RUMUEKE

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POINT ID	long	lat
ss	6.50009	4.93854
RE1	6.50236	4.938668
RE2	6.50262	4.94003
RE3	6.50243	4.94066
RE4	6.50211	4.94107
RE5	6.50225	4.9411
RE6	6.50256	4.94059
RE7	6.50271	4.94005
RE8	6.5025	4.93844
RE9	6.5029	4.93714
RE10	6.5028	4.93716
RE11	6.5025	4.93797
RE12	6.50238	4.9386
wp178	6.5017	4.93852
wp180	6.50033	4.93842
bp2o195	6.50055	4.93817
wp181	6.50034	4.93797
wp164	6.50008	4.93805
wp165	6.49869	4.93785
wp166	6.49741	4.93772
wp167	6.49738	4.93776
wp168	6.49848	4.9381
wp169	6.4993	4.93822
wp170	6.50005	4.9384
wp171	6.49991	4.93864
wp172	6.49975	4.93896
wp173	6.4998	4.93896
wp174	6.5001	4.93884
wp175	6.50033	4.93858
wp176	6.50095	4.93859
wp177	6.50169	4.93861
bp1o182	6.50025	4.93813
bp1o183	6.50029	4.93821
bp3n191	6.49928	4.93799
✓bp3n192	6.49938	4.93809
bp2n194	6.50042	4.93827



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G. INCIDENT INFORMATION:

a. Impacted Area Details

- Total calculated area of impact 2.04170 Ha.
- Impact within R.O.W YES
- Impact outside R.O.W YES

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

NIL	Recovered oil: V_{rec} :	NIL	Barrels
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Controlled recovery/evacuation from source with no impact to environment:

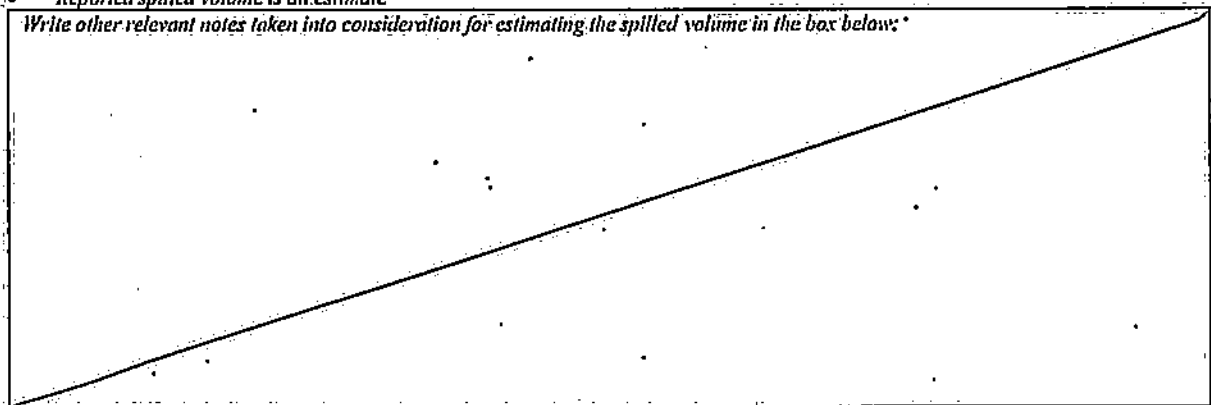
NIL	Barrels
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c. Net Estimated Spilled Volume V_{est} (bbls)* =	2,149.42 BARRELS
Estimated Reported Volume** V_{rep} (bbls) =	2,150 BARRELS

***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 estimating the spilled volume in the box below:



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 JIV 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]:
- Asset Owner:
- Signatories agree with reported findings:
- Separate DPR form has been filled out with same findings

Tick as applicable

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f. Appendix 1: Overview sketch of the site

