

JOINT INVESTIGATION REPORT

INCIDENT NO: 2225804 JIV report S/N: 0196

(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: 2225804 2. Type of incident* OIL SPILL
3. Name of Location 14" OKORAI - RUMUEKPE PIPELINE
4. Name of nearest community ULA- IKATA 5. State: RIVER 6. LGA AHOADA
7. Type of Production facility/Installation OIL PIPELINE
8. Asset owner/District THE SHELL PETROLEUM DEVELOPMENT COMPANY OF NIGERIA LTD (SPDC) PIPELINE

B. INCIDENT INFORMATION:

9. Details of incident
a. Date of incident: 11TH DECEMBER 2018
b. Start date/time of investigation: 13TH DECEMBER 2018 1400HRS
c. Investigation End date: 15TH DECEMBER 2018 Actual investigation duration, days: THREE (3) DAYS
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

Additional observations around the spill point:

NOT APPLICABLE

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

- | | | |
|--|--|--|
| <input checked="" 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 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
Distribution of copies: White (Asset Owner); Pink (DPR); Green (NOSDRA); Yellow (State Ministry of Environment); Blue (Host Community).

JOINT INVESTIGATION REPORT

INCIDENT NO: 2225804 JIV report S/N: 0193

g. Spill point coordinates

Measuring unit

WGS 84

Northings: LATITUDE	Easting: LONGITUDE
5.05145	6.58284

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] }
 [,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?

☒ [N]

14. Further response/repair initiated as at the time of JIV?

☒ [N]

If yes to item 14, give brief description:

REPAIR BY CLAMPING

15. Was there any disruption to the investigation?

☒ [N]

Version 2018/01

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

JOINT INVESTIGATION REPORT

INCIDENT NO: 2225804 JIV report S/N: 0193

If yes to item 15 give brief description:

THE HOST COMMUNITY DID NOT ALLOW JIV TO HOLD ON 13TH AND 14TH DECEMBER 2018, JIV WAS COMPLETED ON 15TH DECEMBER 2018.

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					

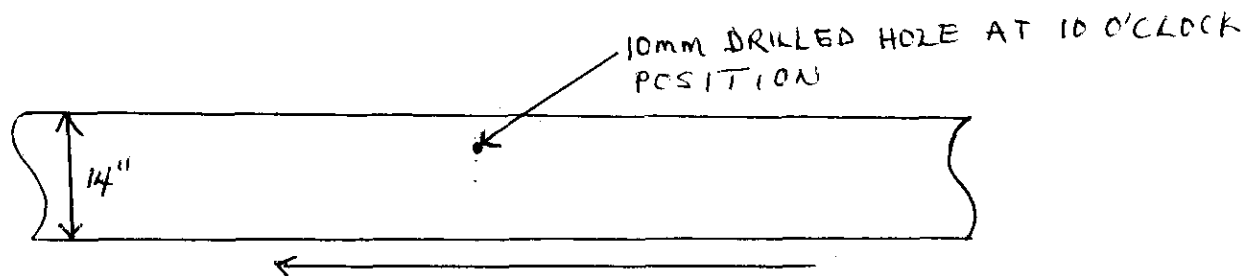
18. Fishing Nets/Fish Ponds

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 OF 14" OKORDIA - RUMUEKPE PIPELINE AT ULA-IKATA SHOWING 10MM DRILLED HOLE AT 10 O'CLOCK POSITION BY UNKNOWN PERSONS.**



OKORDIA TO RUMUEKPE

Version 2018/01

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

JOINT INVESTIGATION REPORT

INCIDENT NO: 2225804 JIV report S/N:

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
307	5.05145	6.58293
308	5.05133	6.5831
309	5.05119	6.58318
310	5.05118	6.58327
311	5.05119	6.58329
312	5.05118	6.5833
313	5.05115	6.58328
314	5.0509	6.58346
315	5.05082	6.58355
316	5.05152	6.58286
319	5.05144	6.58279
320	5.05137	6.58288
321	5.05136	6.58288
322	5.05146	6.58296
333	5.05074	6.58347

Version 2018/01

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

JOINT INVESTIGATION REPORT

INCIDENT NO: 2225804 JIV report S/N: 0193

G. INCIDENT INFORMATION:

a. Impacted Area Details

- Total calculated area of impact 0.1475 Ha
- Impact within R.O.W YES
- Impact outside R.O.W YES

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

Recovered oil V_{rec} :	<u>NIL</u>	Barrels
---------------------------	------------	---------

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

<u>NIL</u>	Barrels
------------	---------

c. Net Estimated Spilled Volume $V_{Est}(bbls)^* =$

21.55 BBLs

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

22 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) x 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.

Version 2018/01

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

JOINT INVESTIGATION REPORT

INCIDENT NO: 2225804 JIV report S/N: _____

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:

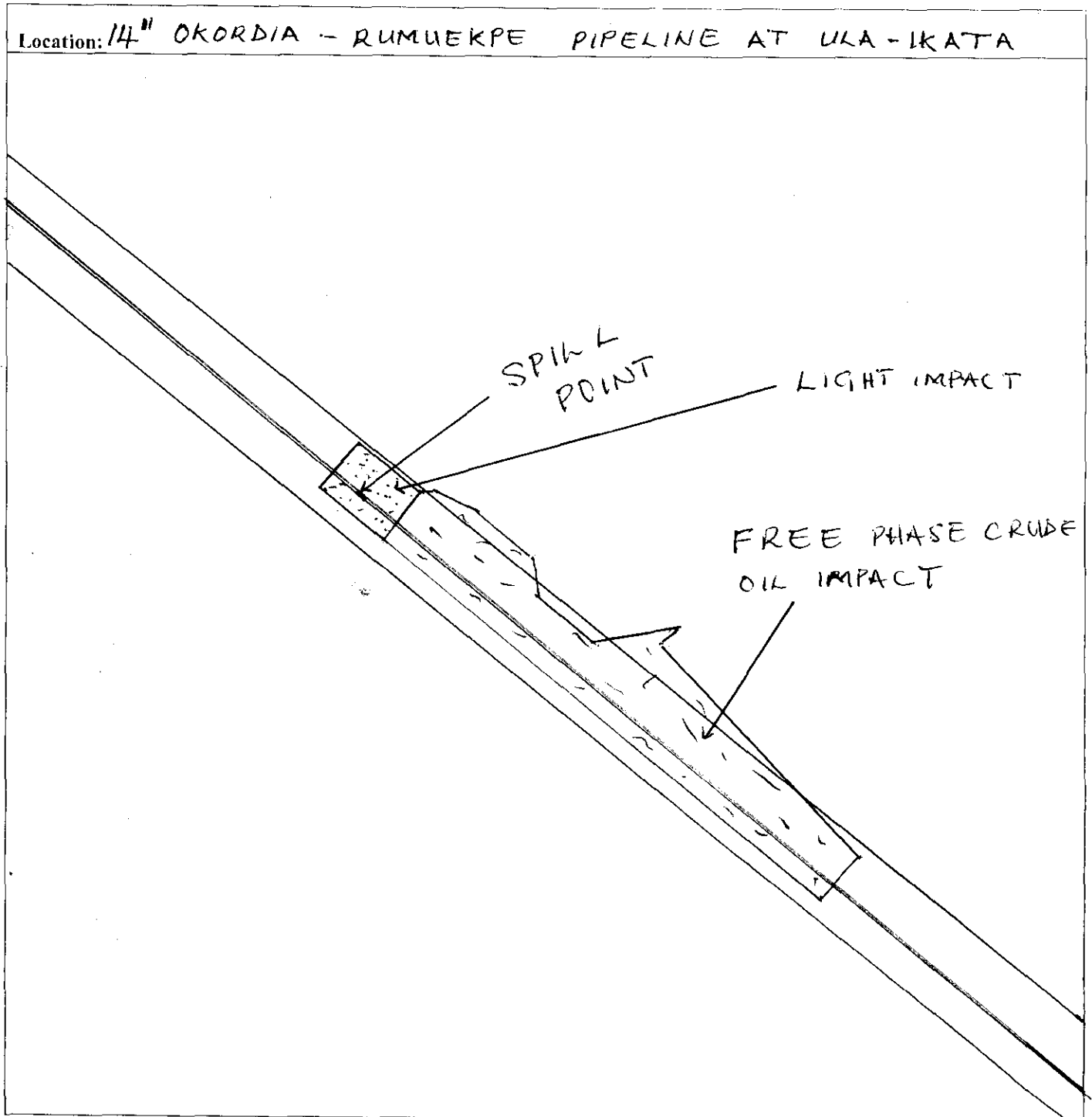
- Host Community: ☒
- Department of Petroleum Resources [DPR]: ☐
- National Oil Spill Detection and Response Agency [NOSDRA]: ☒
- State Ministry of Environment [SME]: ☒
- Asset Owner: ☒
- Signatories agree with reported findings: ☒
- Separate DPR form has been filled out with same findings ☐

Tick as applicable

JOINT INVESTIGATION REPORT

INCIDENT NO: 2225804 JIV report S/N: 1

f. Appendix 1: Overview sketch of the site



Version 2018/01

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