

JOINT INVESTIGATION REPORT

INCIDENT NO: 2100999 JIV report S/N: 1085

(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: 2100999 2. Type of incident* OIL SPILL
3. Name of Location 8" UMUECHEM - NKPOKU PIPELINE
4. Name of nearest community OMUNWEI 5. State: RIVERS 6. LGA IKWERRE
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: 17TH JUNE 2018
b. Start date/time of investigation: 21ST JUNE 2018 / 1300HRS
c. Investigation End date: 23RD JUNE 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 INVESTIGATIONS TEAM SAW A CRUDE THEFT POINT (2" VALVE) INSTALLED AT 12 O'CLOCK POSITION.

c. 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,

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g. Spill point coordinates

h. Measuring unit

WGS 84

Northing: <u>LAT.</u>	Easting: <u>LONG.</u>
<u>4.98970</u>	<u>7.02294</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).

} NON SEEN
WITHIN AREA

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:

SPILL RESPONSE AND LEAK REPAIR

15. Was there any disruption to the investigation?

[N]

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If yes to item 15 give brief description:

F.T.O. Freedom to operate failed on 21ST JUNE 2018.

ISSUE RESOLVED ON 23RD JUNE 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

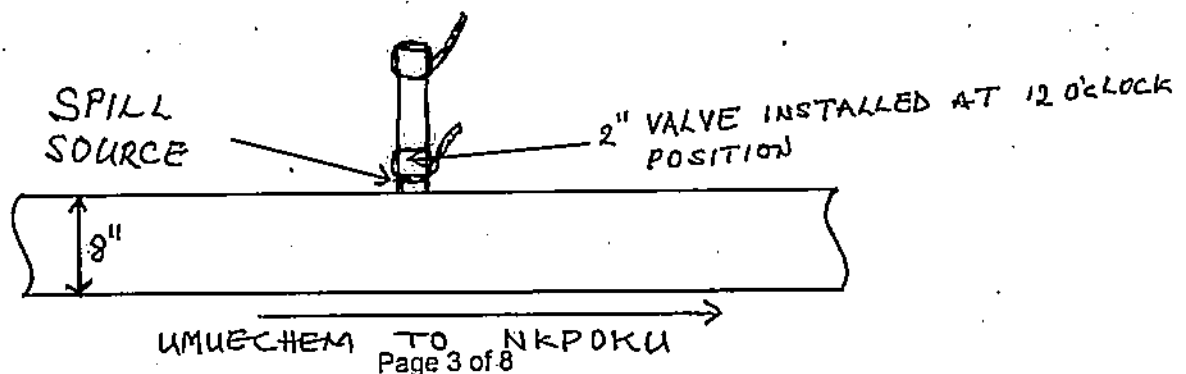
S/N	Nets/Ponds	Description	Quantity/Size	Comments
	NONE WITHIN AREA OF IMPACT			

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 detail report of the leak point should be contained in the leak report, overview sketch of the site should be added as an appendix I)

8" UMUECHEM - NKPOKU PIPELINE AT OMUNWEI SHOWING A 2" VALVE CRUDE THEFT POINT INSTALLED AT 12 O'CLOCK POSITION BY UNKNOWN PERSON



8" UMECHIEM - NKPOKU D/L @ OMUNWEI

FID 2018 2100999

LIST OF COORDINATES IN WGS 84

PT_ID	LAT	LONG
P1	4.98979	7.02298
P2	4.98969	7.02296
P3	4.98965	7.02294
P4	4.98983	7.02289
P5	4.98981	7.02286
P6	4.98982	7.02281
P7	4.98985	7.02281
P8	4.98986	7.02285
P9	4.99004	7.02285
P10	4.99035	7.02281
P11	4.99038	7.02274
P12	4.99042	7.02272
P13	4.99046	7.02277
P14	4.99061	7.02273
P15	4.99058	7.02271
P16	4.99065	7.02272
P17	4.99066	7.02274
P18	4.99096	7.02272
P19	4.99119	7.02271
P20	4.99174	7.02261
P21	4.99191	7.02257
P22	4.99214	7.02248
P23	4.99236	7.02249
P24	4.99242	7.0224
P25	4.99237	7.02237
P26	4.99248	7.02221
P27	4.9925	7.02212
P28	4.99252	7.02214
P29	4.99255	7.02229
P30	4.99258	7.02229
P31	4.9925	7.02238
P32	4.99251	7.02241
P33	4.99251	7.02245
P34	4.99259	7.0225
P35	4.99271	7.0225
P36	4.99273	7.02253
P37	4.9926	7.02255
P38	4.99225	7.0226
P39	4.99207	7.02259
P40	4.99193	7.02261
P41	4.99099	7.02277
P42	4.99076	7.02282
P43	4.99035	7.02289
P44	4.99017	7.0229
P45	4.99008	7.02293
P46	4.98994	7.02294

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23/06/2018

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G. INCIDENT INFORMATION:

a. Impacted Area Details

- Total calculated area of impact 0.3054 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>7 BARRELS</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 $V_{Est}(bbls)^* =$

39.75 BARRELS

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

40 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 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 6e (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
- 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

