

THE SHELL PETROLEUM DEVELOPMENT COMPANY OF NIGERIA LIMITED.

JOINT INVESTIGATION REPORT FOR INCIDENT NO: 1380472 JIV report S/N: 00839

(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: 1380472 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 PIPELINE

B. INCIDENT INFORMATION:

9. Details of incident

- a. Date of incident: 14TH APRIL, 2015
 b. Start date/time of investigation: 16TH APRIL, 2015 / 13:00 HOURS
 c. Investigation End date: 16TH APRIL, 2015 Actual investigation duration, days: ONE (1) DAY
 d. Description of spill point environment

- | | | |
|---|--|---|
| <input type="checkbox"/> Firmed 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: **SPILL WAS OBSERVED TO HAVE OCCURRED ON AN ONGOING REMEDIATION SITE. ON ARRIVAL AT SITE, THE JOINT INVESTIGATION TEAM OBSERVED CRUDE OIL BUBBLES WITHIN A POOL OF FREE-PHASE OIL AT THE SPILL POINT BESIDE WHICH WAS A YELLOW TARPAULIN MATERIAL WITH SOME SAND BAGS ON TOP OF IT, LEFT ON SITE BY UNKNOWN PERSON(S).**

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"/> Third party tampering with Clamp |
| <input type="checkbox"/> Third party tampering with valve setting, | | <input type="checkbox"/> Third party tampering with flange, |
| <input type="checkbox"/> Corrosion | <input type="checkbox"/> Saver-pit over flow, | <input type="checkbox"/> Surge vessel overflow, |
| <input type="checkbox"/> Bulging Outward | <input type="checkbox"/> Flare System/Bund wall failure | <input type="checkbox"/> Accidental 3 rd party equipment |
| impact <input type="checkbox"/> Valve Failure | <input type="checkbox"/> com unit failure | <input type="checkbox"/> Cold vent |
| <input type="checkbox"/> Relief valve failure | <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) construction e) Encroachment f) Fire,

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g. Spill point coordinates

Measuring unit	
Northings: (LATITUDE)	Easting: (LONGITUDE)
<u>4.98304</u>	<u>7.02393</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

<input type="checkbox"/> Government reserved and designated protected area	[,m]	IMPACTED BY SPILL.
<input type="checkbox"/> Drinking water source	[,m]	
<input type="checkbox"/> Built up area	[,m]	
<input checked="" type="checkbox"/> Farmlands	[,m]	
<input type="checkbox"/> Fish Farm/Pond	[,m]	
<input type="checkbox"/> Fishing net	[,m]	
<input type="checkbox"/> Others (specify).	[,m]	

12. Containment measures put in place;

☐ Booms ☐ Trench ☐ Dyke ☒ Natural depression ☒ Pit ☐ None

☒ Others: DITCH OBSERVED AROUND SPILL POINT.

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:

REPAIRS WERE EFFECTED ON THE AFFECTED SECTION OF PIPELINE BY CLAMPING.

15. Was there any disruption to the investigation? [☒] [N]

If yes to item 15 give brief description:

HOST COMMUNITY REPRESENTATIVES INITIALLY PREVENTED THE JOINT INVESTIGATION FROM COMMENCING UNTIL MONETARY DEMANDS WERE MET.

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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
1.	CASSAVA		✓		WITHIN AN IMPACTED AREA OF 0.92 Ha	WITHIN SPILL - IMPACTED AREA (FARM)
2.	MAIZE		✓			
3.	PALM TREES			✓		

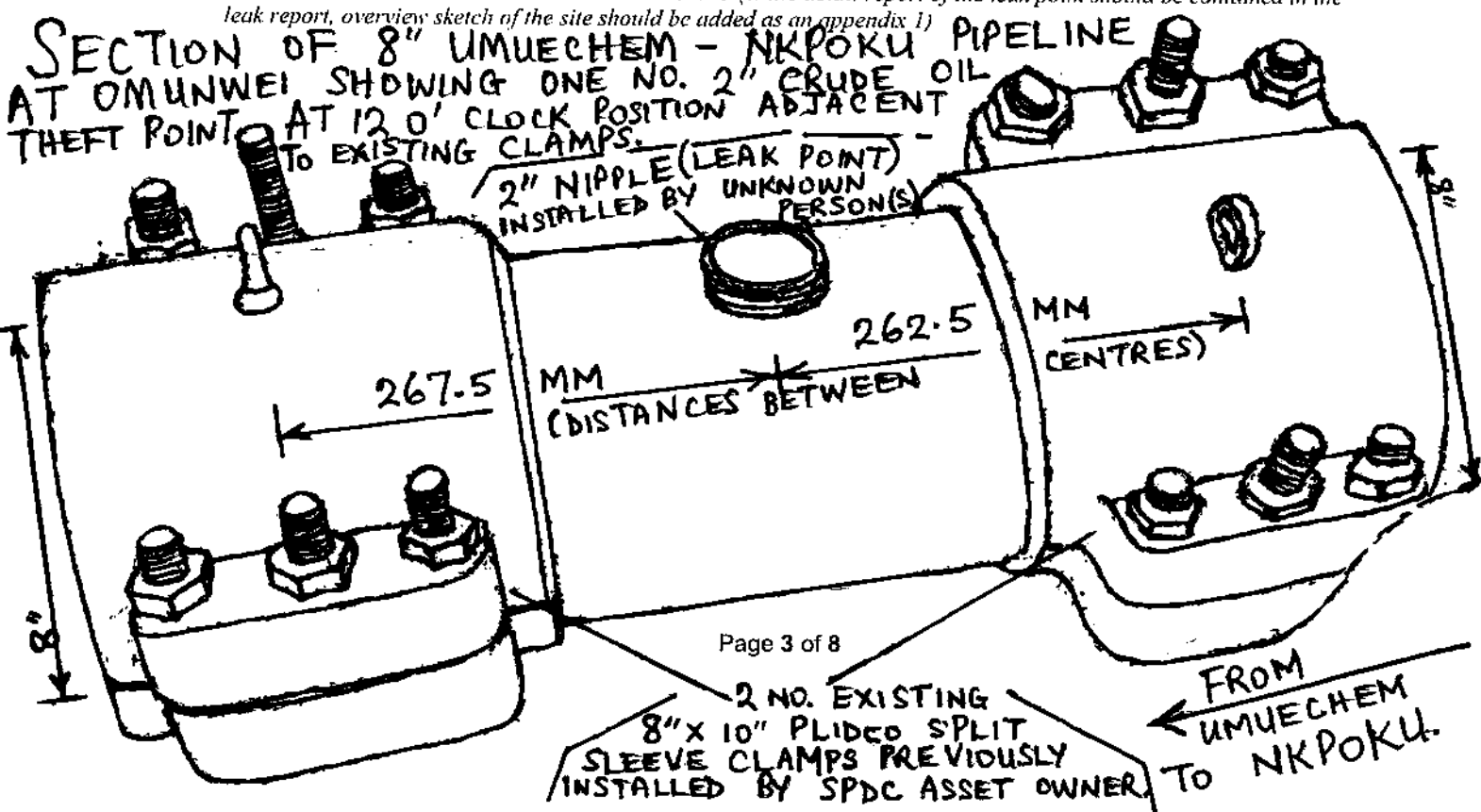
18. Fish/Nets/Ponds

S/N	Fish/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 1)



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20. Impacted area boundary Coordinates (If more, Print and attach as an appendix)

[illegible]

8"UMUECHEM-NKPOKU DELIVERY LINE AT OMUNWEI**APPENDIX A: IMPACTED AREA COORDINATES****INCIDENT NUMBER:1380472****WGS 84****POINT LATITUDE LONGITUDE****COORDINATES OF SUPERFICIAL IMPACT ON FARMLAND**

242	4.98318	7.02418
243	4.98305	7.02446
244	4.98344	7.02476
245	4.98331	7.02513
246	4.98310	7.02533
247	4.98253	7.02497
248	4.98241	7.02466
249	4.98240	7.02466
250	4.98277	7.02409
241	4.98331	7.02393
251	4.98274	7.02404
252	4.98280	7.02378
253	4.98289	7.02377
254	4.98300	7.02362
255	4.98287	7.02354
256	4.98290	7.02351
257	4.98296	7.02355
258	4.98296	7.02355
259	4.98302	7.02357
260	4.98363	7.02261
261	4.98375	7.02238
262	4.98363	7.02236
263	4.98361	7.02240
264	4.98356	7.02238
265	4.98358	7.02234
266	4.98302	7.02225
267	4.98302	7.02231
268	4.98297	7.02231
269	4.98297	7.02225
270	4.98278	7.02222
271	4.98268	7.02222
272	4.98270	7.02227
273	4.98265	7.02226
274	4.98265	7.02223
275	4.98240	7.02221
276	4.98239	7.02218
277	4.98268	7.02219
278	4.98367	7.02230
279	4.98402	7.02251
280	4.98401	7.02254
281	4.98386	7.02246
282	4.98355	7.02288
283	4.98357	7.02288

284	4.98354	7.02291
285	4.98351	7.02291
286	4.98306	7.02366
287	4.98313	7.02370
288	4.98316	7.02366
289	4.98322	7.02376
290	4.98317	7.02381
291	4.98319	7.02388

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G. INCIDENT INFORMATION:

20. Impacted Area Details

- Total calculated area of impact 1.40Ha
- Impact within SPDC R.O.W YES
- Impact outside SPDC R.O.W YES

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

Recovered oil V_{rec} :	<u>188</u>	Barrels
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Controlled recovery/evacuation from source with no impact to environment:

<u>NIL</u>	Barrels
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22. Net Estimated Spilled Volume $V_{est}(bbls)^* =$ 336-33

Estimated Reported Volume $V_{rep}(bbls) =$ 337 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:

IN ESTIMATING THE SPILLED VOLUME, PARTICULARLY WITH RESPECT TO VOLUME OF OIL INFILTRATION IN SOIL, THE LOOSE PARTICLE NATURE OF THE SOIL WITHIN SPILL POINT ENVIRONMENT WAS TAKEN COGNIZANCE OF (BEING AN ONGOING REMEDIATION SITE) BY CARRYING OUT TRIAL PIT EXCAVATION IN ORDER TO VERIFY INFILTRATION DEPTH IN THE SOIL.

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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23. GENERAL STATUS OF THE SITE

A. 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"/>
B. Investigation of the incident site showed that there is residual impact on site requiring further works <input checked="" type="checkbox"/>

24. REPRESENTATIVES

<p>This report was filled, agreed and signed by the following joint investigation 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"/>• Nigeria Police Force [NPF]: <input checked="" type="checkbox"/>• Shell Petroleum Development Company [SPDC]: <input checked="" type="checkbox"/>• Signatories agree with reported findings: <input checked="" type="checkbox"/>• Separate DPR form has been filled out with same findings <input checked="" type="checkbox"/> <p style="text-align: right;"><i>Tick as applicable</i></p>
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25. Appendix 1: Overview sketch of the site

