



NATIONAL OIL SPILL DETECTION AND RESPONSE AGENCY JOINT INVESTIGATION VISIT (JIV) FORM

Note: This Form is to be completed and signed by all participating parties in the field in BLOCK letters

1. Company: Shell Petroleum Development Company Ltd.
2. Type of Complaint/Incident:
☒ Oil Pollution ☐ Fire/Explosion ☐ Drilling Mud/Chemical Pollution
☐ Others (Specify).....
3. Incident Details
i. Date of Incident: 4/3/2014 ii. Date first reported: 5/3/2014
iii. Date of first investigation: 8/3/2014 iv. Spill Incidence No.: 1134823
v. Date of follow-up investigation: 16/07/2014 the form was signed off on 18/3/2014 (H.A.)
vi. Time investigation started: 16:00 HRS
vii. Estimated quantity spilled(bbls): 17 viii. Quantity Recovered: —
4. Site Details
i. Site/Location: 48" Export line to C.L.P. (Crude Loading Platform)
ii. State: Delta iii. L.G.A: Brimbu
iv. Spill Co-ordinates: N(m) 138974.4
E(m) 317010.6
v. Spill area
☐ Land ☐ Swamp ☐ Freshwater ☐ Mangrove ☐ Coastline
☐ Near shore ☒ Offshore ☐ Others (specify).....
vi. Structural Controls in Place
☐ Boom ☐ Trenches ☐ Bund wall ☐ Sorbents ☒ Others (specify) None
5. Circumstances Around Spill Point
i. Visual observation of Hole Position
☐ 12 O' Clock ☐ 10 O' Clock ☐ 2 O' Clock ☐ 3 O' Clock
☐ 4 O' Clock ☐ 5 O' Clock ☐ 6 O' Clock
ii. Type of Oil contaminant
☒ Crude Oil ☐ Condensate ☐ Chemicals ☐ Refined Products
☐ Others (specify)
- iii. Facility
☐ Pipeline ☐ Flow line ☐ Wellhead ☐ Manifold ☐ Flow Station ☐ Rig
☐ Storage Tank ☐ Compressor Plant ☒ Others (specify) Export line
- iv. Cause Of Spill.
☐ Corrosion ☐ Equipment Failure ☒ Third Party Interference ☐ Accident
☐ Operational Error ☐ Others (specify).....
- v. Visible Sign of Third Party Interference
☐ Hacksaw Marks ☐ Drilled Holes ☐ Blasting ☐ Theft ☐ Acid
☒ Others (specify) A retrofitted valve assembly installed on the export line (48")

Supporting reasons for third party interference:

- ① Schematic diagram of the RETROFITED VALVES, since pictures could not be taken because of the muddy nature of the sea bed.
- ② Electrodes, flange, and sealant were also brought out by the diver as evidences of third party interference
- ③ The Export line 48" could not be lifted because of the size

9) The Community and the Other regulator (DPR)
submitted to the company's position

6. Impact of Incident

i. Properties impacted by the incident

- ☐ Farmland ☐ Fish Pond ☐ Vegetation ☐ Fishing Net ☒ Surface water
☐ Venerable Objects ☒ Others (specify).....

ii. Nature of impact

- ☐ Oil stained vegetation ☐ Oil stained fishing nets ☐ Dead floating fishes
☐ Dead floating crabs ☐ Withering of vegetation ☒ Others... *oil sheen sighted on water*

iii. Delineation of impacted area

- ☐ Within Company's facility/ROW ☐ Outside Company's facility/ROW *offshore.*

7. Type of properties/ structures, if any, found outside the right-of-way

- ☐ Crops ☐ Fish Farm/ Pond ☐ Fishing net ☐ Makeshift
☐ Permanent ☐ Others

8. Extent of Impact

a) Community (indicate name)

i. *Ogulgghs Kingdon*

ii.

iii.

iv.

b) Land (indicate area in m²)

i.

ii. *43.0 Hectares*

iii.

iv.

b) Creeks/Creek lets

☐ Tidal

☐ Non-tidal

NAME	DIRECTION OF SLICK	LENGTH OF SLICK	WIDTH OF SLICK*
<i>[scribble]</i>	<i>[scribble]</i>	<i>[scribble]</i>	<i>[scribble]</i>
<i>[scribble]</i>	<i>[scribble]</i>	<i>[scribble]</i>	<i>[scribble]</i>
<i>[scribble]</i>	<i>[scribble]</i>	<i>[scribble]</i>	<i>[scribble]</i>

c) Swamp

☐ Tidal

☐ Non-tidal

NAME	DIRECTION OF SLICK	LENGTH OF SLICK	WIDTH OF SLICK
<i>[scribble]</i>	<i>[scribble]</i>	<i>[scribble]</i>	<i>[scribble]</i>
<i>[scribble]</i>	<i>[scribble]</i>	<i>[scribble]</i>	<i>[scribble]</i>
<i>[scribble]</i>	<i>[scribble]</i>	<i>[scribble]</i>	<i>[scribble]</i>

d) River

☐ Tidal

☐ Non-tidal

NAME	DIRECTION OF SLICK	LENGTH OF SLICK	WIDTH OF SLICK
<i>[scribble]</i>	<i>[scribble]</i>	<i>[scribble]</i>	<i>[scribble]</i>
<i>[scribble]</i>	<i>[scribble]</i>	<i>[scribble]</i>	<i>[scribble]</i>
<i>[scribble]</i>	<i>[scribble]</i>	<i>[scribble]</i>	<i>[scribble]</i>

e) Shoreline/water

NAME	DIRECTION OF SLICK	LENGTH OF SLICK	WIDTH OF SLICK
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<i>[scribble]</i>	<i>[scribble]</i>	<i>[scribble]</i>	<i>[scribble]</i>
<i>[scribble]</i>	<i>[scribble]</i>	<i>[scribble]</i>	<i>[scribble]</i>

9. Photograph/Map/Chart Ref.

- ☒ Still photographs ☒ Video coverage ☐ Mapping

10. Samples taken..... No

11. Investigation carried out by

- ☐ Foot ☐ Boat ☒ Aircraft

12. Remarks/Recommendation Visible sheen sighted moving towards the shore, clean-up, repairs should be carried out, the company should arrange to cap the cause of spill. This will necessitate the next 17-25 hrs line of action to be taken.

13. Time investigation ended 17-25 hrs line of action to be taken.

14. Name and Signature of Participants

❖ NOSDRA

1. Nwankwo Jude 8/8/2014
- 2.
- 3.

❖ DPR

1. //
2. //
3. //

❖ STATE MINISTRY OF ENVIRONMENT

- 1.
2. //
3. //

❖ COMPANY (SPDC)

1. Osephode, J. parent 08/03/14
2. KOROLE, N HSE support for 08/03/14
3. EMALURETIRE O. FOR CK 08/03/14
4. ADAMS O. H. OIL SPILL RESP. 08/03/14
5. AGHAYO DANN HSE LEAD 08/03/14

❖ COMMUNITY (Oguleru Kingdom)

1. Igha chief John D. egbeke. Igha 08/03/14
2. Opudu SEMODE YOUTH PRESIDENT 08/03/14
- 3.
- 4.
- 5.



THE 48 INCH FOT EXPORT PIPELINE LEAK INCIDENT OF 4TH MARCH 2014

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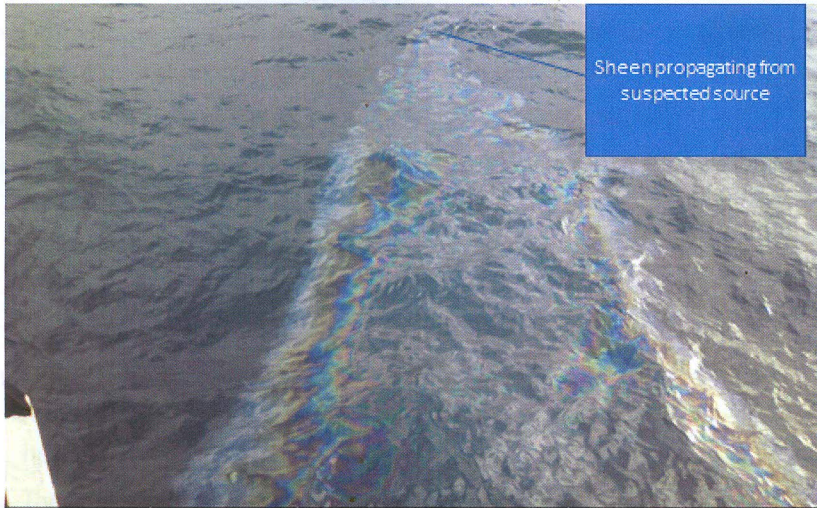
LEAK DETECTION AND INVESTIGATION

- At about 1222hrs on 04/03/2014 during crude export operation, Forcados offshore surveillance vessel reported observing bubbles with sheen on water surface some 8km from the coastline, which was suspected to be from the Forcados 48 inch export line. Export operation was suspended at 1230hrs.
- Emergency response was initiated both at Forcados Terminal and Port Harcourt.
- Coordinates of the leak location placed it within the vicinity of the export pipeline
- Oil Spill Response and operations team were mobilized same day to the leak location
- Photographs of sheen at the location were taken
- Leak point detection and repair teams were contacted and mobilized.

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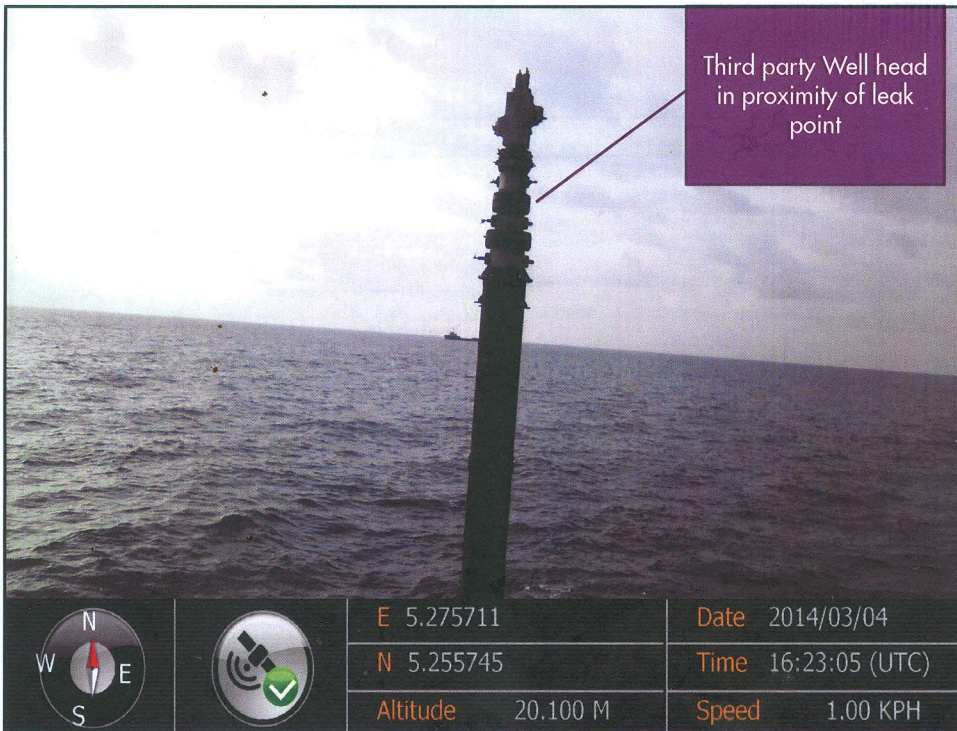
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LEAK DETECTION AND INVESTIGATION



Sheen propagating from suspected source

		E 5.277041	Date 2014/03/04
		N 5.255928	Time 16:21:23 (UTC)
		Altitude 21.600 M	Speed 1.14 KPH



Third party Well head in proximity of leak point

		E 5.275711	Date 2014/03/04
		N 5.255745	Time 16:23:05 (UTC)
		Altitude 20.100 M	Speed 1.00 KPH

LEAK POINT DETECTION AND REPAIR

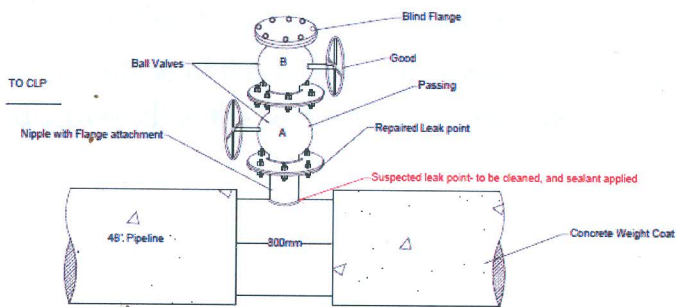
- DSV was deployed to the leak site on 6/03/2014 to carry out leak detection and repairs operations by on-board divers.
- Diving for the leak detection commenced but unsuccessful.
- On 7/3/2014, Diving continued and leak point discovered on the pipeline. A retrofitted valve assembly installed on the export line was discovered to be the source of leak. (See pictures and images in next slides)
- The assembly was not part of the export pipeline construction.
- The end flange of the retrofitted assembly had 5 of the 8 stud bolts removed, i.e. only 3 in place. The 3 were slack and loosened with free hand by the divers
- The end flange and bolts were unusually too new for a pipeline of 42yrs under seabed, suggesting it was a recent activity- ref the picture of the flange

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Schematic Diagram of Valve Assembly found Installed on Export Line

VALVE ARRANGEMENT ON 48" EXPORT PIPELINE AT FORCADOS (Status as at 13:00hrs- 11-03-14)



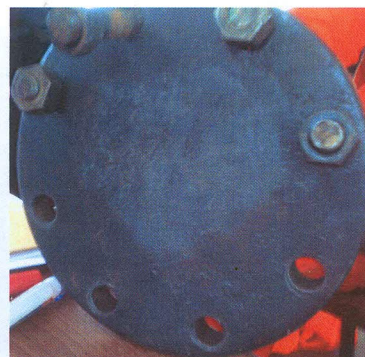
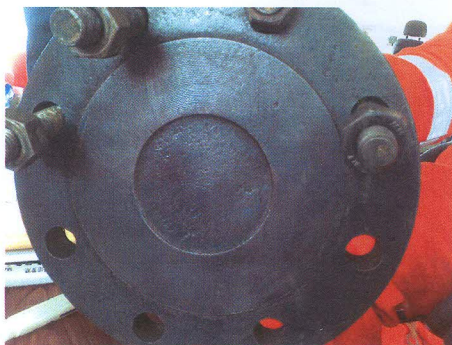
Note: Drawing not to scale

TITLE: Valve & Flange Arrangement	Drawn: John Hughes	Vessel: DSV Helios	Dive No: 516	Photo Ref:
Structure: 48" Export Pipeline	Proj Rtr: M. Kaste	Dred: Coberekan George	Anomaly Ref:	
File: Forcados-SPOG	Survey Date: 07/03/2014	Dataset Ref:		

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Pictures of the Flanges from the Installed Valve Assembly



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LEAK POINT DETECTION AND REPAIR

- Divers stopped the leak by sealing the leak point using a special epoxy resin
- The repaired leak point was leak-tested okay.
- During the course of the leak repair, some foreign objects were discovered on the seabed around the retrofitted valve assembly.

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Welding Electrodes and Metals Found Underwater



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CONCLUSION

- The leak was caused by failure of the valve assembly retrofitted on the export pipeline by unknown third party

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