



**A. GENERAL INFORMATION:**

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- 2011\_607865
1. Spill incident Number: \_\_\_\_\_
2. Name of Location 10<sup>th</sup> KOKORI DELIVERY LINE AT IDJERE SECTION RDW
3. Name of nearest community IDJERE
4. State DELTA LGA UGHELLI NORTH
5. Type of Production facility/Installation DELIVERY LINE Asset owner /District NWSP

**B. INCIDENT INFORMATION:**

6. Details of incident 05/1/11
- a. Date of incident
- b. Date/Period of investigation, 11/1/11 \$12/1/11
- c. Description of spill point environment
- ☒ Firmed soil (Y)
- ☐ Loose soil (X)
- ☐ Previously excavated area (X)
- ☐ Under water (X)
- ☐ Swampy (X)
- ☐ Exposed pipe surface (X)
- d. Description of leak point (tick as applicable);
- ☐ Drilled hole,
- ☐ Hack saw cut,
- ☐ Explosive tear,
- ☐ Complete Rupture
- ☐ Inward dent,
- ☐ Well head tampering
- ☐ Failed Weld-on illegal hot tap valve,
- ☐ Missing pipeline (flowline)
- ☐ Crude oil theft (illegal bunkering) point,
- ☐ Third party tampering with Clamp Bolt/Nut,
- ☐ Third party tampering with valve setting,
- ☐ Third party tampering with flange Nuts/bolts,
- ☐ Corrosion,
- Type: \_\_\_\_\_
- ☐ Saver-pit over flow,
- ☐ Surge vessel overflow,
- ☐ Outward dent
- ☐ Others (specify). \_\_\_\_\_

- e. Spill point coordinates

Nothing:

176771

Easting:

404557



C. RISK/DAMAGE ASSESSMENT

No. 0039

7. Type of environment of spill site:

- ☒ Land  
☒ Swamp  
☒ water CONFINED

Type of environment of which oil has spread:

- ☒ Land  
☒ Swamp  
☒ water CONFINED

8. Distance from the nearest sensitive habitat

- ☐ Government reserved and designated protected area  
☐ Drinking water source  
☐ Built up area  
☐ Farmlands  
☒ Fish Farm/Pond  
☐ Fishing net NONE  
☐ Others (specify).

[ ,m] NONE WITHIN 1 KM RADIUS  
[ ,m] NONE SIGHTED WITHIN 100MTR  
>[1000 ,m]  
>[1000 ,m]  
[ ,m]  
[ ,m]

9. Containment measures put in place;

- ☐ Booms  
☐ Trench  
☐ Dyke

☒ ☒  
☒ ☒  
☒ ☒

☐ Others: N/A

10. Any pictures or video coverage?

☒ [Y] ☒ [X]

11. Was there any disruption to the investigation?

☒ [Y] ☐ [N]

If yes give brief description:

BECAUSE OF CLAIMS AND NOT AGREEMENTS TO THE BEST  
OBSERVED BY THE COMMUNITY ~~AND~~ ON THE FIRST DAY  
BUT WAS LATER AGREED THE FOLLOWING DAY.

D. TYPE/NUMBERS OF PROPERTIES, IF ANY, FOUND WITHIN THE AREA OF SPREAD OF OIL

A. Structures / Properties

| S/N | Type of Structures                | Description | Size | Number | Comments |
|-----|-----------------------------------|-------------|------|--------|----------|
|     | <u>NONE WITHIN AREA OF IMPACT</u> |             |      |        |          |
|     |                                   |             |      |        |          |
|     |                                   |             |      |        |          |
|     |                                   |             |      |        |          |
|     |                                   |             |      |        |          |



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B. Crops/Economic Trees

| S/N | Types of crops | Young | Medium | Matured | Quantity | Comments                    |
|-----|----------------|-------|--------|---------|----------|-----------------------------|
| 1   | RUBBER TREES   | /     | /      | ✓       |          | WITHIN AND OUTSIDE SPDC ROW |
|     |                |       |        |         |          |                             |
|     |                |       |        |         |          |                             |

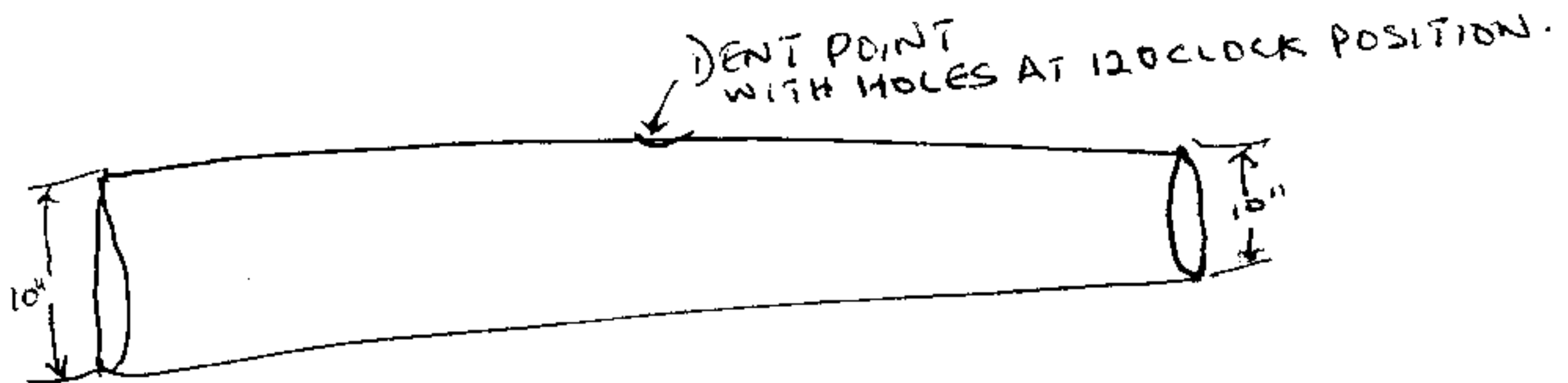
C. Fish/Nets/Ponds

| S/N | Fish/Nets/Ponds | Description     | Quantity/Size       | Comments                              |
|-----|-----------------|-----------------|---------------------|---------------------------------------|
| 1   | PONDS           | LOCAL FISH POND | 416.3M <sup>2</sup> | PONDS ARE WITHIN AND OUTSIDE SPDC ROW |
|     | /               | /               | /                   | /                                     |
|     |                 |                 |                     |                                       |

D. Others (Specify) i.e. Animal Traps

| S/N | Others                      | Description | Quantity/Size | Comments |
|-----|-----------------------------|-------------|---------------|----------|
|     | NONE WITHIN AREA OF IMPACT. |             |               |          |
|     |                             |             |               |          |
|     |                             |             |               |          |

E. GRAPHIC DESCRIPTION OF LEAK POINT (Details should be contained in leak repair report)





F: TABLE SHOWING SOME OF COORDINATES TAKEN DURING JIV FOR AREA CALCULATION  
E. Coordinates

| S/N | Northing | Easting |
|-----|----------|---------|
| 1   | 176753   | 404548  |
| 2   | 176757   | 404553  |
| 3   | 176751   | 404558  |
| 4   | 176761   | 404564  |
| 5   | 176762   | 404578  |
| 6   | 176750   | 404561  |
| 7   | 176765   | 404565  |
| 8   | 176771   | 404564  |
| 9   | 176776   | 404567  |
| 10  | 176776   | 404571  |
| 11  | 176770   | 404554  |
| 12  | 176782   | 404561  |
| 13  | 176782   | 404558  |
| 14  | 176790   | 404557  |
| 15  | 176780   | 404568  |
| 16  | 176772   | 404563  |
| 17  | 176777   | 404567  |
| 18  | 176791   | 404575  |
| 19  | 176798   | 404565  |
| 20  | 176804   | 404572  |
| 21  | 176804   | 404583  |
| 22  | 176791   | 404575  |
| 23  | 176789   | 404584  |
| 24  | 176785   | 404582  |
| 25  | 176780   | 404582  |



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G. INCIDENT INFORMATION:

17 Impacted Area Details

- a. Total calculated area of impact 532.3
- Impact within SPDC R.O.W 426.5
  - Impact outside R.O.W 105.8

18 Volume of oil recovered before completion of JIV ( $V_{rec}$ ):

Recovered oil  $V_{rec}$ : NOT APPLICABLE barrels

19. Computation of the residual volume on site

a. Computation of the volume of pooled free phase oil (on land or confined water body).

- i. Area ( $m^2$ ) occupied by pool of free phase oil 446.3
- ii. Average Depth (m) of pool of free phase oil 0.0005
- iii.

Volume of pooled of free phase oil:  $V_{pool}$ : 1.31 barrels

iv.

b. Computation of volume of infiltrated oil in the soil ( $V_3$ ).

- i. Area ( $m^2$ ) covered by the oil: 116
- ii. Average Depth (m) below ground surface of infiltration of oil: 0.03
- iii. Soil type: CLAY
- iv.  $p_e$  (effective porosity of the soil): 8%
- v.

Volume of infiltrated oil:  $V_3$ : 1.75 barrels

20. Computation of volume of oil on open water based on standard coloration.

|                    | Thickness<br>(mm) | Percentage<br>coverage | Volume ( $m^3$ )                       |
|--------------------|-------------------|------------------------|--|
| Barely Visible     | 0.00004           |                        |  |
| Silvery            | 0.00008           |                        |  |
| Slight Colour      | 0.00015           |                        |  |
| Bright Colour      | 0.0003            |                        |  |
| Dull               | 0.001             |                        |  |
| Dark               | 0.002             |                        |  |
| Black oil          | 0.1               |                        |  |
| Emulsion (30% Oil) | 1                 |                        |  |
| Percent Total      |                   | 100%                   | Total Volume <u>NOT APPLICABLE</u> bbl |

Spill Factors from USCG FOG (2000 Edition)



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Volume of oil on open water  $V_{wat}$ : NOT APPLICABLE barrels

21. Calculation of evaporated volume:

i. Oil type: BONNY MEDIUM

ii. E-Factor: 15%

iii.

Volume of evaporated oil.  $V_{vap}$ : 0.46 barrels

| Oil Type               |          | Bonny Light | Bonny Medium |
|------------------------|----------|-------------|--------------|
|                        |          | E-Factor    | E-Factor     |
| Period Since Oil Spill | <1 day   | 10%         | 5%           |
|                        | 1-7 days | 25%         | 15%          |
|                        | >7 days  | 40%         | 25%          |

9. Gross Total Estimated Spilled Volume  $V_{Est}(bbls) = V_{vap}(bbls) + V_{wat}(bbls) + V_{inf}(bbls) + V_{pool}(bbls) + V_{recJ}(bbls)$

$V_{Est}(bbls) = 1.31 + 1.75 + 0.46 = 3.5$

10. Net Total Estimated Spilled Volume  $V_{Est}(bbls) = V_{vap}(bbls) + 0.6 \cdot V_{wat}(bbls) + V_{inf}(bbls) + V_{pool}(bbls) + V_{recJ}(bbls)$

$V_{Est}(bbls) = 3.5 \text{ BBL}$

\* Calculation of the respective estimated volume is to done using the new spill estimation software on site

\* Conversion of m3 to barrel is Total volume VT (m3) x6.29

\* Emulsification factor for spill on water to consider is 60% of volume of oil.

This report was filled and signed on the 12 / 01 / 20 11 at incident site by joint investigation representative from

- Host Community ☒
- Department of Petroleum Resources [DPR] ☒
- National Oil Spill Detection and Response Agency [NOSDRA] ☒
- State Ministry of Environment [SME] ☒
- Nigeria Police Force [NPF] ☒
- Shell Petroleum Development Company [SPDC] ☒

Tick as applicable