THE SHELL PETROLEUM DEVELOPMENT COMPANY OF NIGERIA LIMITED 0407 - 855191JOINT INVESTIGATION REPORT FOR INCIDENT NO: (Note: As practicable as possible the JIT report is to be signed in the field by all the participating parties) A. GENERAL INFORMATION: 855191 1. Spill incident Number: 2.Type of incident * 3. Name of Location 36" NKPTKU - Bomy TRANS 4. Name of nearest community ENEKA 5. State: KINEES 7. Type of Production facility/Installation Pireline 8. Asset owner/ District **B. INCIDENT INFORMATION:** 9 Details of incident a. Date of incident: 17 TH AUGUST, 2012 b. Start date/time of investigation: 25 TH AUGUST, 212 AND c. Investigation End date: 27 TH - 35 TH AUGUST 27 d. Description of spill point environment Previously excavated area Firmed soil Loose soil □Under water □ Swampy ☐Exposed pipe surface ☐ Well Plateform (on Water) e. Description of leak point (tick as applicable); ☐ Explosive tear, Hack saw cut Drilled hole Inward dent. ☐ Well head tampering Complete Rupture Failed Weld-on illegal hot tap valve, Missing Pipeline/Flowline) Crude oil theft (illegal) bunkering) point, ☐ Third party tampering with Clamp ☐ Third party tampering with valve setting, Third party tampering with flange, ☐ Surge vessel overflow □Corrosion ☐Saver-pit over flow, ☐Flare System/Bund wall failure Outward dent ☐ Cold vent □Valve Failure Com unit failure Relief valve failure Others (specify)_ f. Incident caused by: ☐Mystery_ Third party interference ☐ Operational g. Spill point coordinates Measuring unit Northing: | ()

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				CALICIA MILIA			
	JOINT	INVEST	IGATION REP	ORT FOR INCID	ENT NO:	0407 - 8551	91
C.	RISK ASSI	ESSMEN	IT				z.
	10.	Type o	of environment:				
	La	nd	□ Swamp	□ Water	☐ Seasonal s	wamp	
	i.	Type of	f environment to	which oil has spr	ead:		
	La	nd	□ Swamp	□ Water	☐ River (ider	ntify)	
	ii.	Weathe	r condition				
		ining ce from th	Sunny ne nearest sensiti	ve habitat			
	□ Dr □ Bu □ Fa □ Fi: □ Ot	inking want inking are mlands sh Farm/I shing net thers (spe	ater source a Pond	esignated protecte	d area [[[[[,m] ,m] ,m] ,m] ,m] ,m]	CABLE.
	□ Bo	oms	☐ Trench	□ Dyke			
	□ Ot	hers:h	not App	LICABLE.			
	13. Any pi	ictures or	video coverage?		[Y]	[N]	
	14. Was th	nere any d	lisruption to the i	investigation?	[Y]	[N]	
If	yes give brief	f descript	ion: JOINT IN	ουι Γαν Γ <i>ε</i> συ	VISIT ((V)	REPAIR NAS 1	SISRUPTES_
B	echuse i	At TO I	WHE NOT.	OBTAINED)	of (Ere): Community	CLIAMES
			T BE PX				

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

15. Structures / Properties

S/N	Type of Structures	Description	Size	Number	Comments
					
\	KITKE IX	74(1)	AR	CA OF	IMPACL
	14 14 14 14 14 14 14 14 14 14 14 14 14 1				

JOINT INVESTIGATION REPORT FOR INCIDENT NO: 0407 - 855 (9)

16. Crops/Economic Trees.

S/N	Type of crops	Young	Medium	Matured	Quantity	Comments
	, t				*	ρ
		1111111111	ARC		IXUAC	
	1 40140	<i>ba</i> , 1, 1 , 1 , 1		7 0		1
[

17. Fish/Nets/Ponds

S/N	Fish/Nets/I	Ponds	Descripti	on	Quantity/S	Size	Commer	ıts
	~ k ^	1.	HPAL	4 P C A)	ردا		<u> </u>
	ロフト	\mathcal{N}	<i>al</i> 11/1	A/VEV		-IIX	1/K-E 1	
•	- · •	, ,	•	•		Γ,		

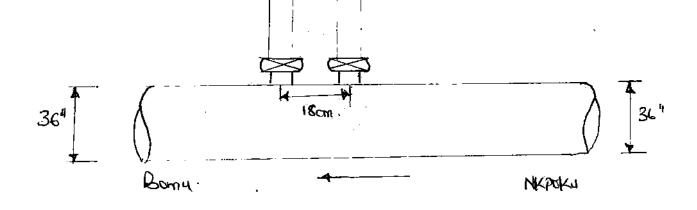
18. Others (Specify) i.e. Animal Traps

S/N	Others	· ·	Descripti	on	Quantity/Si	ze	Comments
		, ,		_			P
	× 1/ 1		TILDA I	X PC h	T	IN	10x < 7
	OIAC	7411	THA -	7\N _ /\		717	
,		_					

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)

SHOWING LEAK POINTS NIGHT PIPELINE AT ENEK

LGAK DUG TO 2 (TWO) NOS OF 2 INCH WGIDGED HIPPLE WITH BALL VALVE AT 120 CLOCK POSITION, ON 36" NEPOKU - BOMU YEARS NIGHT PIPELINE. AT. KNEKA



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THE SHELL PETROLEUM DEVELOPMENT COMPANY OF NIGERIA LIMITED. JOINT INVESTIGATION REPORT FOR INCIDENT NO:

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

19. Impacted area boundary Coordinates (If more than 12 points, Attach as an appendix 2)

		ELT
S/N	Northing	Easting
1.	101553.23m	507413.60m
<u>ವಿ.</u>	100-101556:18m	507417,98m
3.	101551.93m	507420.58m
4.	101547.79m	507415.73m
		30/08/2012

G INCIDENT INFORMATION:

20	Impacted	Area	Datoile
711	impacted	ATER	пзетянк

Total calculated area of impact Impact within SPDC R.O.W Impact outside R.O.W Volume of oil recovered before completion of JIV (Vree.):	
Resovered oil Vest	barrels
20. Computation of the residual volume on site a. Computation of volume of pool of free phase oil (on land or confined water body). i. Area (m²) occupied by pool of free phase oil HET SPET ii. Average Depth (m) of pool of free phase oil NIL Computation Average Depth (m) of pool of free phase oil NIL Computation Average Depth (m) of pool of free phase oil NIL Computation Average Depth (m) of pool of free phase oil NIL Computation Average Depth (m) of pool of free phase oil NIL PAGE 2 0 2 m 2 0 (25) Page 4 of 9 Page 4 of 9	

JOINT INVES	STIGATION REP	ORT FOR INCIDENT I	NO:	0407 - 855	191
iii. Emulsification	2.6	ıl			
iv.	Volume of	pool of free phase oil. $V_{ m poo}$	f:	N.L.	barrels
-		rated oil in the soil (V_{inf}) .		23 _m 2	
i		vered by the oil:			
i	_	ol of free phase oil in tou			
i			ce of i	nfiltration of oil: 0.5 m	
i	v Soil type: 🔀	fud wedan			
3		porosity of the soil)	25 <i>°</i>		
i	v. Volume o	of infiltrated oil. V _{inf}		0.4575	barrels
	of oil on open wate	on open water based o		dard coloration. 8.058	s parcels
·	Thickness (mm)	Percentage coverage		Volume (m3)	
Barely Visible	0.00004		_		
Silvery	0.00008				
Slight Color		 \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\			
Bright Color			_	<u>-</u>	
Dull	0.001	A-1)	$N \rightarrow$	CARIC	
Dark		(\ \ ' \		CALSCE	
Black oil	0.1 1		+		
Emulsion (30% Oil)		100		Total Volume	obt
· iii.	Percent Total	il on open water. Vww	<u>'* ∟</u>	IQUAI VOIGINO	barrels
L.	<u> 211 </u>		<u> </u>		bancis
22. Calculation c	-				
i. Oil t	ype: BONNY L	<u> 1</u> 9#T		•	
ii. E-Fa	actor: 25 7	<u>.</u>			
iii.	Volume of e	vaporated oil. V		0.23.	barrels
Evanora	tion Factors (F.Fac	tor) for SPDC Crude oil			
Evapora		Danner Tiebt Dec		 	

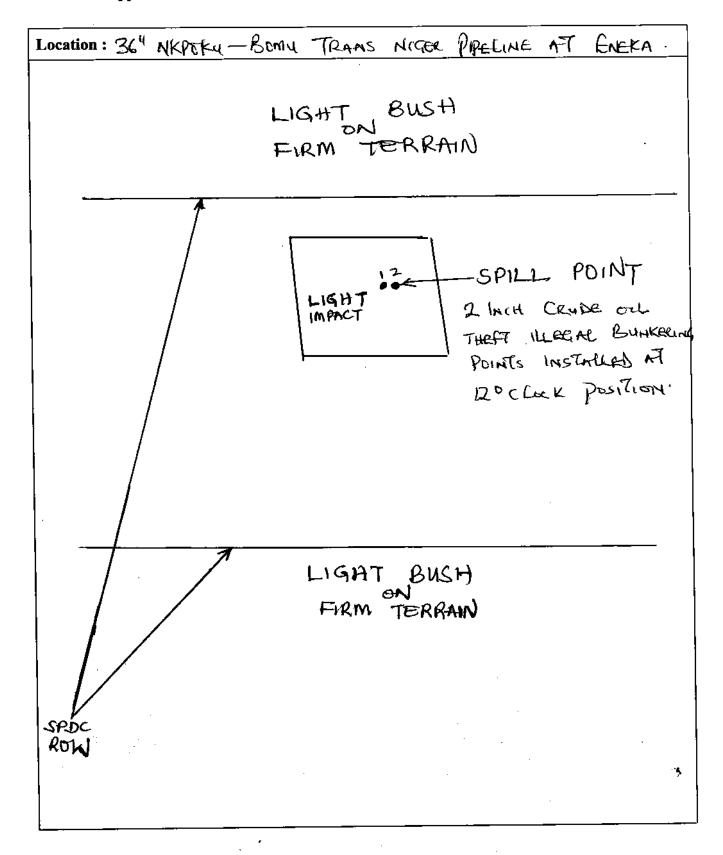
Evaporation Factors (E-Factor) for SPDC Crude oil					
Oil Type	Days on site	Bonny Light	Bonny Medium		
Period Since Oil Spill	< 1 day	10%	5%		
<u> </u>	1-7 days	25%	15%		
	> 7 days	40%	25%		

^{*}If area is not same as the total area of impact, please indicate in the overview sketch
** Spill Factor from USCG FOG (2000 Edition)

JOINT INVESTIGATION REPORT FOR INCIDENT NO:
23. Gross Total Estimated Spilled Volume
$V_{\text{Est}}(bbls) = V_{\text{evap}}(bbls) + V_{\text{wat}}(bbls) + V_{\text{inf}}(bbls) + V_{\text{pool}}(bbls) + V_{\text{recJ}}(bbls)$
VEST (BOLS) = Vevap (BOLS) + V wat (BOLS) + V int (
24. Net Total Estimated Spilled Volume
$V_{\text{Est}}(bbls) = V_{\text{evap}}(bbls) + 0.6*V_{\text{wat}}(bbls) + V_{\text{inf}}(bbls) + V_{\text{pool}}(bbls) + V_{\text{recJ}}(bbls)$
VEST(bbis)= 6.92 BARRELS
*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 m3 to barrels is Total volume VT (m3) x 6.29 *Emulsification factor for spill on water to consider is 60% of volume of oil.
25. GENERAL STATUS OF THE SITE
A. Joint investigation of the incident site found that there is no residual impact after the initial response and therefore recommend that the site be closed out
B. Investigation of the incident site showed that there is residual impact on site requiring further works
26 REPRESENTATIVES This report was filled and signed on the investigation representatives 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

27. Appendix 1: Overview sketch of the site



JOINT INVESTIGATION REPORT FOR INCIDENT NO: 407-955 [9]

21. Appendix 2:TABLE SHOWING ADDITIONAL COORDINATES TAKEN DURING JIV FOR AREA CALCULATION

		<u> (Мікиж</u> л	110 - Beft)
S/N	Northing	(WIKNA V	Easting
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	+		
			
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	·		+ /
			30/08/2012
		/	
	 	<u></u>	****
	+	<u> </u>	
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	1		