JOINT INVESTIGATION REPORT FOR INCIDENT NO: 12449 70 JIV report S/N: 00708 (Note: As practicable as possible the JIT report is to be signed in the field by all the participating parties) A. GENERAL INFORMATION: 1. Spill incident Number: 1244970 2. Type of incident* OIL SPILL 3. Name of Location NUM RIVER FLUISTATION . 4. Name of nearest community OloRoma 5. State: BAYELSA 6. LGA SOUTHERN IJAW 7. Type of Production facility/Installation 5 12 12 8. Asset owner/District LAND 2 **B. INCIDENT INFORMATION:** 9. Details of incident
a. Date of incident: 4TH SEPTEMBER, 2014 b. Start date/time of investigation: 9TH SEPTEMBER, 2014 c. Investigation End date: 16TH SEPTEMBER 2814 investigation duration, days: Two (2) 114 d. Description of spill point environment Firmed soil Loose soil Recently excavated area Under water ☐ Swampy Exposed pipe surface ☐Well Platform (on Water) □Drill Rig Additional observations around the spill point: c. Description of leak point (tick as applicable); □Drilled hole ☐Hack saw cut ☐ Tear (Complete Rupture ☐Well head tampering ☐Inward dent. ☐Failed Weld-on illegal hot tap valve, ☐Failed Clamp ☐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, Corrosión ☐Saver-pit over flow, ☐Surge vessel overflow, ☐Bulging Outward Flare System/Bund wall failure Accidental 3rd party equipment □Valve Failure Com unit failure Cold vent Relief valve failure Others (specify)__ f. Incident caused by: ☐ Third party interference (Sabotage☐; crude theft☐; Line theft☐; Accidental 3rd party damage☐)

Others (including Mystery spills)

✓Operational

^{*}This can be: a) Oil Spill b) Drilling fluid/Chemical c) Siltation d) construction e) Encroachment f) Fire,

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C. RISK ASSESSMENT							-
10. Type of env	ironment:						
⊠ Land □s	wamp	□Water	□Se	asonal swa	amp 🗖 Sh	oreline/Wa	terfront
i. Type of envir	onment to wh	ich oil has s	pread:				
√2/Land □s	wamp	□Water	□Ri	ver (identi	fy)		
ii. Weather cond	lition						
Rain Su 11. Distance from the near	•	□Dry abitat	□Wet	□Wii	ndy	□Hot	□cool
Government reser Drinking water so Built up area Farmlands Fish Farm/Pond Fishing net Others (specify).	urce	_		7[,m] ,m] ,m] ,m] ,m]		
12. Containment measures	put in place;						
□Booms □T		ロDyke れんと・	□Na	itural depr	ession	□Pit	□None
13. Any pictures or video	coverage?			W	[N]		
14. Further response/repa	ir initiated as	at the time	of JIV?	[Y]	W		
If yes to item 14, give brief descrip	tion:						
MOT APP	LICHBL	, E					
15. Was there any disrupti	on to the inve	stigation?		[Y]	LW]		.
If yes to item 15 give brief desc	ription:			_	_		
MOT APPI	1 CABI	ţ.					

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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 Structure	es Description	Size Number	Comments
NONE	LITHIN	AREA	OF IMPACT
17 Crops/Fearonic			

Crops/Economic Trees

S/N Type of crops	Young	Medium	Matured	Quantity	Comments
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1/11/0/4/E-	KHILIM	1 1 1 T	(Ŋ - <i>M1</i> /	$\mu \circ 1$
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18. Fish/Nets/Ponds

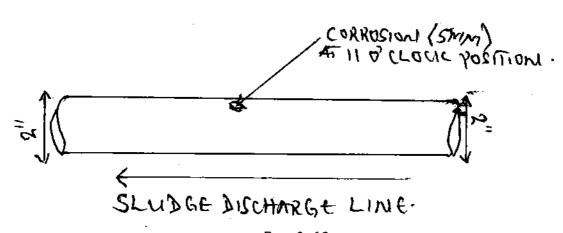
S/N	Fish/Nets/Ponds	Description		Quantity/Size	Comments
N	ONE WIN	HIN	ARE	A 0	IMPACT

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

S/N Others	Description		Quantity/Size	Comments
MONE	Alimin	AR	CA O	IMPACT

E. GRAPHIC DESCRIPTION OF LEAK POINT (while detail report of the leak point showld be contained in the leak report, overview sketch of the site should be added as an appendix 1)

SKETCH SHOWING POSITION OF CORROSION AT 11 D'CLOCK ON



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F: TABLE SHOWING SOME OF COORDINATES TAKEN DURING JIV FOR AREA CALCULATION 20. Impacted area boundary Coordinates (1f more, Print and attach as an appendix)

S/N	Northing (M)	Easting (w)
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	88879.39 88888.62 88888.64	403 105.63
	00000	403101 20.
	86000.04	403101 30.
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DINT INVESTIGATION REPORT FOR INCIDENT NO	o <u>:] % 41</u>	1770 JIV report S	^{NN:} 00708
G. INCIDENT INFORMATION:			
20. Impacted Area Details			
Total calculated area of impact	·003HA		
<u> </u>	485		·
Impact outside SPDC R.O.W	NO		
21. Volume of oil recovered before completion	of JIV (Vre	_{c1}):	
	ed oil V _{recJ} :	NIL	Barrels
Controlled recovery/evacuation from source	with no imp	act to environment:	
MIL	Barrels		
22: Net Estimated Spilled Volume V _{gat} (bbls) O · 3 9 RAPREL	.		
Estimated Reported Volume** V _{rep} (bbls)=	·4 B	<u>ት</u> ደዩ៩ ኒ •	The second secon
	· 4 B.	details on the calculation)	The first service of the service of

Conversion of m³ to barrels is Volume (m3) x 6.29; **Round up estimated volume to next wi

Any spill volume in excess of 1 bbl is rounded up to the next whole number.

Any spill volume in less than I bbl is rounded up to the next 0.1 bbl.

Calculated volume = 15.3 bbl ----- Reported volume = 16 bbl ----- Reported volume = 0.4 bbl Calculated volume = 0.01 bbl ------ Reported volume = 0.1 bbl. Examples:

Wherever this estimation tool is not applicable please refer to paragraph 6c (Deviations) of the JIV procedure to use appropriate steps for column estimation; record the calculation in a plain sheet of paper and attach to the JIV report.

ESTIMATION OF OIL SPILL VOLUME

A

Impact within SPDC R.O. W I may an	OIL	SPILLED ONSHORE	OFFSHORE (Leak stopped at	source)		
i Impact within SPOCR O.W Estimated Recovered oil (Net) Estimated Recovered oil (Net) Estimated Recovered oil (Net) Estimated Recovered oil (Net) Estimated Recovered oil (Net) V _{sect} 1 Total area coupled by pool of free phase oil I Avarage depth of pool of free phase oil I Avarage depth of pool of free phase oil I Avarage depth of pool of free phase oil I Avarage depth of pool of free phase oil I Avarage depth of infiltration above leaking facility i.e. pipeline/flowline I Avarage depth of infiltration above leaking facility i.e. pipeline/flowline I Avarage depth of infiltration above leaking facility i.e. pipeline/flowline I Avarage depth of infiltration above leaking facility i.e. pipeline/flowline I Avarage depth of infiltration above leaking facility i.e. pipeline/flowline I Avarage depth of infiltration above leaking facility i.e. pipeline/flowline I Avarage depth of infiltration above leaking facility i.e. pipeline/flowline I Avarage depth of infiltration above leaking facility i.e. pipeline/flowline I Avarage depth of infiltration above leaking facility i.e. pipeline/flowline I Avarage depth of infiltration above leaking facility i.e. pipeline/flowline I Avarage depth of infiltration above leaking facility i.e. pipeline/flowline I Avarage depth of infiltration of infiltration of oil Estimated Volume of infiltration of oil Estimated Volume of infiltration of oil Estimated Volume of infiltration below leaking facility i.e. pipeline/flowline I Avarage depth of infiltration below leaking facility i.e. pipeline/flowline I Avarage depth of infiltration below leaking facility i.e. pipeline/flowline I Avarage depth of infiltration below leaking facility i.e. pipeline/flowline I Avarage depth of infiltration below leaking facility i.e. pipeline/flowline I Avarage depth of infiltration below leaking facility i.e. pipeline/flowline I Avarage depth of infiltration below leaking facility i.e. pipeline/flow	<u>lmp</u>	acted Area Details				
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ii Average depth of infiltration above leaking facility i.e. pipeline/flowline iii Soil Ixpa iv P.e. (effective porosity of the soil) V Cause of split Inclidant Date Inclidant			• • •			2
iii Soll type V Cause of spill Coperational Population			•			
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iii Soli type iv Pe (effective porosity of the soil) v Average depth of infiltration below leaking facility i.e. pipeline/flowline vi Total depth below ground surface of infiltration of oil Estimated Volume of Infiltrated oil, V _{NVb} - Select - 0,000 m 0,000 m		•	•	dina		——
iv P _e (effective porosity of the soil) v Average depth of infiltration below leaking facility i.e. pipeline/flowline vi Total depth below ground surface of infiltration of oil Estimated Volume of Infiltrated oil, V _{NVb} 0.000 m		- •	in above leaking lacinty i.e. pipelineatov	AILLIG		
v Average depth of infiltration below leaking facility i.e. pipeline/flowline vi Total depth below ground surface of infiltration of oil Estimated Volume of Infiltrated oil, V _{NVb} 0.000 m			e soil)			
vi Total depth below ground surface of infiltration of oil Estimated Volume of infiltrated oil, V _{MVb} 0.00 m ³			•			<u> </u>
Estimated Volume of infiltrated oil, V _{tot b} 0.00 m ³	١	Average depth of infiltration	on below leaking facility i.e. pipeline/flow	dine		0.000 m
Estimated Volume of inflitrated all, V _{tot b} 0.00 m ³	_	i Total danih balaw second	ourface of infiltration of oil			0.0001m
	٧	т товы серит веюж дгойло	BUDACE OF THRIUBUUR OF OR			0.000
Estimated Volume of infiltrated oil, V tab 0.00 bbis		Estimated Volume of Int	litrated oil, V _{krb}			0.00 m³
		Estimated Volume of int	iltrated oil, V _{Infb}			0.00 bbis

³ Volume of infiltrated oil outside immediate spill point(s) region (V_{infe})

Fotal Area covered by the of Fotal Area of the pool of tre	ee phase oil in touch with soil			20.00 m ² m ²
Soil type	•			Clay ▼
effective porosity of the	soil)			8 %
Average depth below groun	nd surface of infiltration of oil			0.003 m
Estimated Volume of Infil	trated oil, V _{inf c}			0.01 m³
Estimated Volume of infil	trated oil, V _{inf c}			0.03 bbis
Estimated Total Volume o	of Infiltrated oil, V _{inf}			0.04 m ³
Estimated Total Volume o				0.24 bbls
Total area of oil on open wa Table of average depth of o	oil on water based on coloration	Link to Coverage Visual		m²
Spill Factore from USCG FOG (2000 Edition)	Aid		1
	Thickness (mm)	Percentage coverage (%)	Volume (m3)	
Barely Visible	0.00004	-	0.0000	
Silvery	0.000.0	! 	0.0000	
Slight Color	0.00016		0.0000	
Bright Color	0.0003	1	0.0000	
Dull	0.001	- 1	0.0000	
Dark	0,002		0.0000	
Black oil	0.1	†	0.0000	
Emulsion (30% Oil)	1	-	0.0000	
	Percent Total:	0%	0.0000	
Estimated Volume of all s	on anat water V			0.00 m³
Estimated Volume of oil of Estimated Volume of oil of the control	on open water V			0.00 bbls
	At Open water, Ves			0.00 0018
ilation of evaporated volu		<u>-</u>		•
	Evaporation Factors (E-Factor) for S			
Residence time	of spilled oil (days on site)	Oil ty		
			Bonny Medium	
.	<1 day	10%	5%	
	1-7 days	25%	15%	
	> 7 days	40%	25%	I
				No 💘
Nas oil recovery before JI	V completion done before JIV date?			
	V completion done before JIV date? a for evaporation			0.24 bbls
Was oil recovery before JII Estimated volume available E-factor				0.24 bbis
Estimated volume available	e for evaporation			
Estimated volume available E-factor	e for evaporation			40%

JOINT INVESTIGATION REPORT FOR INCIDENT NO: 1244970 JIV report S/N: 00708

23. GENERAL STATUS OF THE SITE

Α.	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
В.	Investigation of the incident site showed that there is residual impact on site requiring further works

24. REPRESENTATIVES

This report was filled, agreed an	d signed by the following j	joint investigation	representatives
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- Host Community:
- Department of Petroleum Resources [DPR]:
- National Oil Spill Detection and Response Agency [NOSDRA]:
- State Ministry of Environment [SME]:
- Nigeria Police Force [NPF]: □
- Sheli Petroleum Development Company [SPDC]:
- Signatories agree with reported findings:
- Separate DPR form has been filled out with same findings□

Tick as applicable

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25. Appendix 1: Overview sketch of the site

