

IN THE HIGH COURT OF JUSTICE

CLAIM NO: HQ12X04933

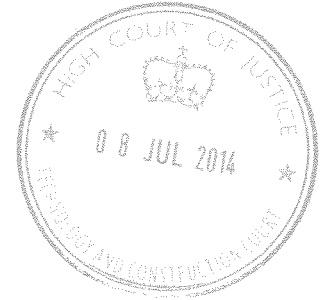
QUEEN'S BENCH DIVISION

HT-13-345

IN THE "THE BOMU-BONNY OIL PIPELINE LITIGATION"

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- (suing for themselves and on behalf of the people of Bodo Community)
- 19) The Bodo Community



Claimants

-and-

Shell Petroleum Development Company of Nigeria Ltd

Defendant

AMENDED REPLY TO AMENDED DEFENCE

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PREAMBLE

- 1 The Claimants' Amended Reply to the Amended Defence dated ~~20 June~~ December 2013:
 - 1.1 Pleads additional facts of which the Claimants were unaware when the Amended Particulars of Claim dated ~~22 November 2012~~ 2 December 2013 were settled ~~or when the Reply to the Individual Claims dated 16 April 2013 were settled.~~
 - 1.2 Responds to distinct points of law which are relevant to the Community claim alone and which are set out at paragraphs ~~103~~ 106 to 110 ~~107~~.
 - 1.3 Is structured thematically and sets out the Claimants' response to the Amended Defence insofar as that pleading advances a positive case.
- 2 Subject to any express admissions made herein, the Defendant will be required to prove the facts averred in its Defence.
- 3 The Amended Reply adopts the following definitions, as defined in the pleadings already before the Court:
 - 3.1 "*Bodo Creek*" means an area of about 9,230 hectares of land, swampland and waterways;
 - 3.2 "*Bodo*" means an aggregate of 35 villages, together known as the Bodo city community, located at the northeast edge of Bodo Creek;
 - 3.3 "*SPDC*" means the Shell Petroleum Development Company of Nigeria Ltd, i.e. the Defendant;
 - 3.4 "*the First Oil Spill*" means the operational spill occurring on 28 August 2008 (according to the Claimants) or October 2008 (according to SPDC);
 - 3.5 "*the Second Oil Spill*" means the operational spill in December 2008;

- 3.6 “the 2008 Oil Spills” means the First and Second Oil Spills;
- 3.7 “the TNP” means the Trans Niger Pipeline;
- 3.8 “the Particulars of Claim” means the Amended Particulars of Claim dated ~~22 November 2012~~ December 2013;
- 3.9 “the Defence” means the Amended Defence dated ~~20 June~~December 2013;
- 3.10 “Bodo Individual RRFs” means SPDC’s response to the Bodo Individual Claimants’ Requests for Further Information (“RFIs”) under CPR Part 18 dated 13 March 2013
- 3.11 “Bodo Community RRFs” means SPDC’s response to the Bodo Community Claimants’ Requests for Further Information (“RFIs”) under CPR Part 18 dated 23 August 2013.

Reservation

- 4 This Amended Reply is premised upon the information currently in the Claimants’ possession and has been drafted prior to full disclosure without the benefit of documentation held exclusively by the Defendant likely to contain materials highly germane to the claims. Accordingly the Claimants reserve the right to amend this Amended Reply upon completion of disclosure herein.

(A) PIPELINE INTEGRITY & OIL SPILL PREVENTION

SPDC's performance on pipeline integrity and maintenance

5 At various instances in the Defence (detailed below) SPDC avers that it complied with international industry standards in the maintenance and operation of its pipeline generally. The Claimants reply as follows to that general assertion:

5.1 During 2006-2010, there was an average of 0.25 spills per 1,000 kilometres of pipeline per year in European countries¹. This average relates to spills of any cause (including natural hazard, mechanical, operational, corrosion, and third party activity) on cross-country oil pipelines in Europe, operated by 77 different companies. The Bomu-Bonny 24" Pipeline, which forms part of the southern end of the TNP and runs through Bodo, is approximately 30 kilometres long. If this section of the TNP matched those international industry standards, there would only have been 0.0075 spills of any cause per year on the Bomu-Bonny 24" Pipeline, or only one spill of any cause every 133 years. Instead, there were 31 spills reported on the Bomu-Bonny 24" Pipeline between 2001 to 2012 alone², an average of 2.6 spills per year. This corresponds to 344 times as many as the European average during 2006 to 2010.

5.2 The number of oil spills in European countries has steadily reduced since 1971, when records began. In the mid 1970s, there was an average 1.1 spills per 1,000 kilometres of pipeline per year. If SPDC matched the standards which prevailed in Europe in the mid 1970s, there would only have been 0.033 spills per year, or one spill every 30 years, on the Bomu-Bonny

¹ CONCAWE report number 8/11 dated Dec 2011 - "Performance of European cross country oil pipelines: Statistical summary of reported spillages in 2010 and since 1971"

² Spills listed in Appendix I to the Bodo Individual RRFIs and Appendix II to the Defence on the 24" Bomu-Bonny Pipeline alone.

24" Pipeline. As it stands, SPDC's performance during 2001-2012 was 78 times worse than European standards in the mid-1970s.

5.3 The 344-fold increased rate of spills on this section of the TNP as compared to international industry standards cannot solely be explained by the illegal activities of third parties. Appendix I to the Bodo Individual RRFIs reveals that there were four spills of an operational nature, and therefore attributable to SPDC, on the 30 kilometres of Bomu-Bonny TNP during 2009-2012³. This amounts to an average of 33.3 spills per year per 1,000 kilometres attributable to SPDC. This is 133 times higher than the European average over the period of 2006-2010 for spills of any cause. The Claimants are not aware of any other country where the TNP would have been permitted to remain open with a record of over one spill every year caused by the operator.

5.4 Despite this, SPDC avers that, in 1995, "*there were no concerns about the technical integrity of the pipeline in and around Bodo*" (Bodo Individual RRFIs Question 45). Consequently, SPDC's purported programme of upgrading its oil pipelines and infrastructure, started in 1995 to address the need "*to renew ageing facilities, [and] reduce the number of oil spills in the course of operations*"⁴ (relied on in paragraph 6487.4 (a) of the Defence), was not applied to Bodo in 1995 or since then.

5.5 Despite the lessons which should have been drawn from the 2008 Oil Spills, there have been four further operational spills due to "*natural corrosion*" on the 30 kms of the Bomu-Bomy stretch of the TNP between 2009 and 2012 (Bodo Individual RRFIs Appendix I).

³ Namely incidents 2009_360352, 2009_436507, 2012_807260 and 2012_811617.

⁴ SPDC, Nigeria Brief, *The Environment*, 1995.

6 The Claimants contend that, whilst SPDC's record compares unfavourably with international standards, that comparison is likely to be skewed in favour of SPDC as a result of the unreliable nature of the data held and/or provided by SPDC as to the performance of its installations. That the data held and/or provided by SPDC is unreliable can be seen from the following examples:

6.1 On or around September 2010, SPDC provided the United Nations Environment Programme ("*UNEP*") with a list of spills which had occurred in Ogoniland ("*the UNEP data*"). There are a number of significant discrepancies between that list and the list provided by SPDC in its Appendix II to the Defence: certain spills appear in one list, but not the other, some are described as being on different pipelines, with differing start and finish dates, and different causes. The most significant example in relation to this litigation is that in the data provided by SPDC to UNEP, the cause of the Second Oil Spill was described as being "*sabotage*", despite SPDC establishing at least by 21 February 2009 (ie 18 months prior to the list being sent to UNEP) that the cause was equipment failure. Further examples of such discrepancies are set out in paragraph 50.1, 50.2 and 52.7 below.

6.2 Further, SPDC's public statements are at variance with the information it has provided in its Appendix II to the Defence. In an article dated 15 October 2008 published in the Nigerian newspaper, 'The Nation', SPDC is reported as stating that an oil spill in Bodo (i.e. the First Oil Spill) was caused by "*third party interference*." SPDC has subsequently admitted that the First Oil Spill was caused by equipment failure. Whilst this statement was made before SPDC had investigated the cause of the spill on 7 November 2008, its public statement that the cause was third party interference shows that (i) information provided by SPDC is unreliable, and (ii) SPDC ascribes the cause of spills on its

pipelines by default to third parties. It is not insignificant to note that under the Oil Pipelines Act 1990, SPDC is under a strict liability to pay compensation for any damage and loss resulting from leaks caused by operational failure, but not as a result of third party interventions.

The applicable Nigerian and International regulations

- 7 As set out in paragraph 40(d) of the Particulars of Claim, Nigerian statutory law requires operators of oil pipelines to comply with “good oil field practice” and imports into domestic law international standards of best practice. Regulation 6 of the Mineral Oils (Safety) Regulations 1997 provides :

“Except as otherwise provided in these Regulations, every drilling, production and other operation which is necessary for the production and subsequent handling of crude oil and natural gas shall conform with good oil field practice which, for the purpose of these Regulations, shall be considered to be adequate if it conforms with:-

- (a) the appropriate current Institute of Petroleum Safety Codes; or*
- (b) the American Petroleum Institute Codes; or*
- (c) the American Society of Mechanical Engineers Codes; or any other internationally recognised and accepted systems.”*

- 8 There are a wide number of codes produced by the American Petroleum Institute (“API”) or the American Society of Mechanical Engineers (“ASME”). Of particular relevance are, inter alia, the following:

- 8.1 API 1160 (Managing System Integrity for Hazardous Liquid Pipelines, 1st Edition November 2001). API 1160 includes guidance for complying with the requirements in the U.S. Code of Federal Regulations governing hazardous liquid pipeline operation and maintenance, including its chapter on pipeline

integrity management in high consequence areas (49 CFR 195.452) (*“the CFR”*). Thus the CFR sets the standard and API 1160 sets out how operators meet that standard. Therefore, complying with API 1160 necessarily means complying with the CFR;

8.2 API Security Guidelines for Liquid Petroleum Pipelines 2003.

8.3 ASME B31.4 (Pipeline Transportation Systems for Liquid Hydrocarbons and Other Liquids) sets out engineering requirements deemed necessary for the safe design, construction and operation of piping systems;

9 Relevant extracts from these Codes and Guidelines are set out in Appendix A to this Reply.

10 It is the Claimants’ case that SPDC operated the TNP in such a way that fell far short of these requirements.

The CFR

11 Under the CFR, a High Consequence Area (*“HCA”*) for pipeline operation is defined as a high population area (meaning an urbanised area), an—other populated area (meaning an area of concentrated population such as a town or village), an unusually sensitive area, or a commercially navigable waterway (49 CFR 195.450). Mangrove ecosystems such as that in Bodo Creek qualify as an HCA. The CFR sets out detailed requirements for operation in HCAs, including

“(c)(1)(i): An operator must assess the integrity of the line pipe by:

(A) Internal inspection tool or tools capable of detecting corrosion and deformation anomalies including dents, gouges and grooves;

(B) **Pressure test** conducted in accordance with subpart E of this part; or

(C) Other technology that the operator demonstrates can provide an equivalent understanding of the condition of the line pipe.

...

(i)(1): An operator must take measures to prevent and mitigate the consequences of a pipeline failure that could affect a high consequence area.

These measures include conducting a risk analysis of the pipeline segment to identify additional actions to enhance public safety or environmental protection.

Such actions may include, but are not limited to... better **monitoring of cathodic protection where corrosion is a concern**, establishing shorter inspection intervals... **modifying the systems that monitor pressure and detect leaks**, providing additional training to **personnel** on response procedures, **conducting drills with local emergency responders**...

...

(i)(3): Leak detection. **An operator must have a means to detect leaks on its pipeline system.** An operator must evaluate the capability of its leak detection means and modify, as necessary, to protect the high consequence area.

...

(j)(3): Assessment intervals. **An operator must establish intervals not to exceed five (5) years for continually assessing the line pipe's integrity.** An operator must base the assessment intervals on the risk the line pipe poses to the high consequence area to determine the priority for assessing the pipeline segments.

....

Appendix C (II)(A): Risk factors for establishing frequency of assessment:

(1) Populated areas, **unusually sensitive environmental areas**, National Fish Hatcheries...

- (2) Results from previous testing/inspection.
- (3) **Leak History** [Leak History table indicates that where **more than 3 spills in the last 10 years should be considered high risk**]
- (4) **Known corrosion** or condition of the pipeline
- (5) **Cathodic protection history.**
- (6) **Type and quality of pipe coating** (disbanded coating results in corrosion)
- (7) **Age of pipeline** (older pipe shows more corrosion – may be uncoated or have ineffective coating) and type of pipe seam [Age of Pipeline table indicates that pipeline **over 25 years should be considered high risk**]
- (8) Product transported (highly volatile, highly flammable and toxic liquids present a greater threat for both people and the environment)
- (9) **Size of pipe** (higher volume release if the pipe ruptures [Line Size Table indicates that **above 18” should be considered high risk**]
- ..
- (13) Time since the last internal inspection/pressure testing
- ..
- (16) Location of the pipeline segment as it relates to the ability of the operator to detect and respond to a leak (e.g. pipelines deep underground, or in locations that make leak detection difficult without specific sectional monitoring and/or significantly impede access for spill response or any other purposes).”
- [Emphasis supplied]

API 1160

- 12 Inter alia API 1160, which gives guidance on the implementation of the CFR, provides:

“5.2

Reassess risk.

Risk assessments should be performed periodically to factor in recent operating data, consider changes to the pipeline system design

(e.g., **new valves, newly replaced pipeline segments or rehabilitation projects**, etc.) and operation (e.g., a change in flow or the hydraulic pressure profile), and analyze the impact of any external changes that may have occurred since the last risk assessment (e.g., population encroachment in new areas). **The results of integrity assessments, such as internal inspection or pressure testing, should also be factored into future risk assessments, to assure the analytical process reflects the latest understanding of pipe condition.**

Revise mitigation and inspection plan.

*The baseline assessment plan should be transformed into an on-going integrity assessment plan that is periodically updated to reflect new information and the current understanding of integrity threats. **As new risks or new manifestations of previously known risks are identified, additional preventive or mitigative actions to address these risks should be performed**, as appropriate.*

...

13.1

The operator shall collect performance information and periodically evaluate the effectiveness of its integrity assessment methods, and its preventive and mitigative risk control activities, including repair. *The operator should also evaluate the effectiveness of its management systems and processes in supporting integrity management decisions. **A combination of performance measures and system audits is necessary** to evaluate the overall effectiveness of a pipeline integrity program."*

[emphasis supplied]

ASME B31.4 (Pipeline Transportation Systems for Liquid Hydrocarbons and Other Liquids)

- 13 ASME B32.4 sets out engineering requirements deemed necessary for the safe design, construction and operation of piping systems. Inter alia it provides :

“434.23.1

Positive displacement meters, turbine meters, or equivalent liquid measuring devices and their proving facilities shall be designed and installed.

...

461.2

The operating company shall establish procedures for determining the external condition of its existing buried or submerged piping systems and take action appropriate for the conditions found, including, but not limited to, the following.

...

(b) Install cathodic protection on all buried or submerged piping systems that are coated with an effective external surface coating material, except at pump stations, tank farms, and terminals. All buried or submerged piping at pump stations, tank farms, and terminals shall be electrically inspected and cathodic protection installed or augmented where necessary.

461.3(a):

Cathodic protection facilities for new or existing piping systems shall be maintained in a serviceable condition, and electrical measurements and inspections of cathodically protected buried or submerged piping systems, including tests for stray electrical currents, shall be conducted at least each calendar year, but with intervals not exceeding 15 months, to determine that the cathodic protection system is operating properly and that all buried or submerged piping is protected in accordance with applicable criteria.”

[Emphasis supplied]

SPDC's compliance with Nigerian and International regulations

14 As to paragraph ~~80~~ 79.3 of the Defence, and SPDC's averment that it complied with good oil field practice, it is unclear that SPDC was or is properly aware of which standards applied:

14.1 In paragraph 79.3(b) ~~80.3(e)~~ of the Defence, SPDC avers that it complied with the ASME "*B31.s Code of Practice*". No such code exists and it is presumed that in fact B31.8S is the code referred to. This Code is entitled 'Managing System Integrity of Gas Pipelines' and "*applies to onshore pipeline systems constructed with ferrous materials and that transport gas.*" This Code does not apply to the TNP as it transports liquid hydrocarbons rather than gas.

14.2 In paragraph 79.3(b) ~~80.3(e)~~ of the Defence, SPDC avers that it complies with the American Petroleum Institute ("API") code of practice 1106. It is presumed that SPDC is in fact referring to API code of practice 1160. As is set out above, the Claimants accept that API 1160 is an applicable standard and contains guidance as how to implement the U.S. Code of Federal Regulation for managing pipeline integrity.

14.3 In the Bodo Individual RRFIs, when asked to confirm whether it had complied with the U.S. Code of Federal Regulation for managing pipeline integrity, SPDC responded: "*It is not clear to which US Federal Regulation reference is here made. Suffice it to say that SPDC complies with all local regulations for managing pipeline integrity which, in their turn, are aligned with and refer to various international standards*" (Bodo Individual RRFIs Question 7.9). Similarly in the Bodo Individual RRFIs, when asked why it had not replaced the TNP with a pipeline

incorporating design factors suitable for a High Consequence Area (as defined by the U.S. Code of Federal Regulation for managing pipeline integrity), SPDC responded: “*SPDC is not clear which design factors from which Code ought, it is suggested, to have been incorporated into a replacement pipeline. Nor is it clear if, and if so on what basis, such a Code is said to be relevant to SPDC's operations in Nigeria. Suffice it to say that SPDC complies with local regulations for managing pipeline integrity which, in their turn, are aligned with and refer to various international standards*” (Bodo Individual RRFIs Question 3). SPDC appears therefore even now to be unaware of the CFR, which is incorporated under Nigerian regulations and applies directly to SPDC in its operations. The CFR is a regulatory system known internationally to the oil industry, and it applies in Nigeria. SPDC professes at paragraph ~~79.3(b)~~ ~~80.3(e)~~ of the Defence to comply with API 1160 (albeit pleaded as 1106), yet seems unaware that API 1160 provides guidance on how to implement the CFR.

15 As to:

15.1 The specific measures described in the Defence at paragraphs ~~80~~79.1(b)(ii) that are said to have been taken by SPDC to prevent pollution from operational spills, and

15.2 Such pipeline integrity plan as SPDC claims in paragraph ~~80~~79.3(c) of the Defence to have had in place,

The Claimants contend that these failed to comply with the CFR, ASME and API Codes.

16 SPDC's pipeline integrity plan failed to comply with the CFR, ASME and API Codes by the absence of a Leak Detection System ('LDS'):

16.1 SPDC has admitted that there was no LDS operating on the Bomu-Bonny section of the TNP (Bodo Individual RRFIs Question 9.1) beyond the totally inadequate surveillance contractor system described below. An effective LDS is a fundamental part of any Integrity Management Plan, and an express requirement of the CFR (i)(3):

“An operator must have a means to detect leaks on its pipeline system. An operator must evaluate the capability of its leak detection means and modify, as necessary, to protect the high consequence area.”

16.2 Further, the TNP manifolds are not equipped with flow rate meters, as admitted by SPDC (Bodo Individual RRFIs Question 6.2 and 9.1) and consequently it is not possible to measure flow rates and compare the flow rate at the point of entry into the pipeline, along the pipeline and then at the point the oil flows from the pipeline into the Bonny Terminal; any difference being the strongest indicator of a loss of product and therefore the speediest route to raising an alarm regarding the presence of a leak.

16.3 One of the consequences of the absence of an LDS was that SPDC say that they became confused as to which of the 24” or 28” Pipeline was leaking during the period of 11 October to 7 November 2008 of the First Oil Spill, as a result of which even on SDPC’s case oil leaked out unabated for a number of days (an indicator in itself of the inability of the surveillance contractor system to accurately report leaks).

17 SPDC’s pipeline integrity plan failed to comply with the CFR, ASME and API Codes in relation to the requirements for cathodic protection systems:

- 17.1 An impressed current cathodic protection system, which provides a low voltage current to the metal of pipelines in order to protect the pipeline against corrosion, is a basic industry standard practice needed to ensure pipeline integrity and an express requirement of ASME B31.4 Code at 461.2 set out above. The TNP does not appear to have been fitted with this protection system as claimed (in Bodo Individual RRFIs Question 8.1), as it does not have the characteristic electric cable bonded to the pipeline. The pipeline at Bomu does not appear to be fitted with the required electrical insulating joint (characterised by its bulbous shape and size which should be visible in aerial photographs), nor do the manifolds at Bomu or Bodo appear to have a cathodic rectifier box/testing station allowing operators to test voltage (which should equally be visible in aerial photographs).
- 17.2 In the alternative, on SPDC's own case, SPDC failed to carry out six monthly cathodic protection surveys of all sections of the pipeline in Bodo between 2000 and 2009 (Bodo Individual RRFIs Question 6.2). Further, on SPDC's own case, the cathodic protection system, if it existed which is disputed, was inoperative on sections of the TNP near the Bomu manifold as the power source at Bomu was not functioning (Bodo Individual RRFIs Question 8.1), which was expressly contrary to ASME B31.4 Code at 461.3(a) set out in Appendix A to this Reply.
- 18 SPDC's pipeline integrity plan further failed to comply with the CFR, ASME and API Codes as follows:
- 18.1 On SPDC's own case, the TNP "*was inspected ad hoc on those occasions on which incidents were the subject of investigations by Joint Investigation Teams*" following the occurrence of a spill (Bodo Individual RRFIs Questions 8.5, 8.7). The *ad hoc*, and 'after the event', nature of the inspections carried out by SPDC

falls far short of the 'preventative maintenance systems' averred to have been in place, and far short of the CFR (j)(1), (2) and (3), API and ASME requirements.

18.2 On the occasion of *ad hoc* joint investigations (“JIVs”), SPDC avers that it carried out ultrasonic thickness (“UT”) measurements of the pipelines (Bodo Individual RRFIs Questions 6.1, 7.1, 7.8). UT measurements provide information as to the thickness of the bare steel walls of a pipeline where the concrete coating has been removed and only at the specific point where the measurement is taken. Further, such *ad hoc* joint investigations were limited to the immediate region of the leak and not up or downstream of the area where concrete coating had not been removed. It is denied that this amounts to “*detailed inspections and assessments*” as averred in paragraph 8079.1(b)(ii)(2) of the Defence.

18.3 On SPDC’s own case, SPDC failed to undertake “*monthly and five yearly intelligent pigging*” of the 24” or the 28” Pipelines in Bodo between 2000 and 2009 (Bodo Individual RRFIs Questions 6.2, 8.3). Pipeline Inspection Gadgets (“PIGs”) operate inside the pipeline to check the thickness of the pipeline wall. They are inserted via a PIG launcher at the manifold and are run through the pipeline to the PIG receiver at the next downstream manifold. Failure to ensure regular intelligent pigging of the TNP falls far short of the ‘*preventative maintenance systems*’ averred to be in place, and the CFR, ASME and API codes.

18.4 On SPDC’s own case, SPDC failed to undertake “*various other regular maintenance activities such as valve replacement and manifold inspection*” in Bodo between 2000 and 2009 (Bodo Individual RRFIs Question 6.2), contrary to CFR (c)(i) set out above. Such maintenance failures are contrary to the duty to

mitigate risk which runs through the CFR and API codes, such as at CFR (i)(1) and API 1160 5.2.

18.5 SPDC's failure to undertake maintenance on the 24" pipeline is particularly egregious in light of the results of a technical integrity and risk status study conducted on the pipeline by a joint team of SPDC and Shell Global Solutions International in 2002. An internal presentation following the study (document 2066) stated that "the remaining life of most of the SPDC Oil Trunklines is more or less non-existent or short, while some sections contain major risk and hazard...Outright replacement is necessary because extensive corrosion and pressure derating has resulted in system capacity constraints and the inability to guarantee evacuation of future increases in throughputs from the various fields, particularly the production forecast peaks in years 2006-8".

~~18.5~~18.6 The pipeline's valves at the manifolds were manually operated. By contrast, industry standard practice since 2000 is to have main line valves fitted with power actuators that can be controlled remotely, allowing for a speedier response to incidents. Further, the Bomu manifold did not provide a platform to access the valves. As a result, technicians would have to wade through oil covered ground (shown on photos of the Bomu Manifold where previous spills remain uncleaned) and climb onto the pipeline to operate the valve manually. A similar process would apply to the water-filled sumps seen at the Bodo Manifold.

~~18.6~~18.7 The section of the TNP at Bodo lacks further basic installations which would be expected in any operating pipeline. In particular:

~~18.6.4~~18.7.1 The flow stations and manifolds are not equipped with pressure gauges, as admitted by SPDC (Bodo

Individual RRFIs Question 6.2 and 9.1). A pressure gauge at the manifolds is a basic necessity of any operating pipeline, and a requirement under CFR (c)(i) and ASME B31.4 Code at 434.23.1.

~~18.6.2~~18.7.2 As is stated in paragraph 16.2 above, the TNP manifolds are not equipped with flow rate meters, as admitted by SPDC (Bodo Individual RRFIs Questions 6.2 and 9.1), and contrary to ASME B31.4 Code at 434.23.1. Without a pressure gauge or a flow rate meter, not only does this mean it is impossible for the operator to know whether or not there is a leak, as described in paragraph 16.2, but further it is impossible for an operator to know whether any attempted isolation of the pipeline has been effective;

~~18.6.3~~18.7.3 There is no bypass valve or closed drain system to depressurise and safely drain down the pipelines at the manifolds;

~~18.6.4~~18.7.4 There is no supervisory control and data acquisition ("SCADA") system in operation on the TNP at Bodo. This is an automated system that collects information from pipelines using sensors and sends the resulting data to the pipeline control centre allowing operators to immediately respond to the data by adjusting pumps and valves remotely as required. Instead, the TNP flow stations communicate with the Bonny Terminal through telephone and email (Bodo Individual RRFIs Question 9.2). In view of the alleged security situation in the Bodo region, industry standard practice would regard this method of communication as distinctly unreliable in view of the immediate action

required to protect the environment in a High Consequence Area in the event of a leak.

~~48.6.5~~18.7.5 The 24" Pipeline does not appear to be fitted with a polyethylene coating as claimed in the Defence at 7980.1(b)(ii)(2)ii. Rather, the 24" Pipeline appears to be fitted with a bitumen or cold tar coating and concrete casing. Moreover, if, as appears to have been the case, the pipeline was concrete-cased at the outset, it could not be upgraded with a polyethylene coating because it is not possible to provide such a polyethylene coating on the surface of the steel pipe without first excavating all of the pipeline and removing the concrete coating. Further, photographs taken at the Bomu Manifold (which are included in the UNEP report, such that the Claimants assume they were taken during 2010 or 2011) and photographs taken following the excavation of the spill sites in November 2008 and February 2009 indicate that such coating as there is, in the form of bitumen or cold tar coating, has not been maintained.

~~48.7~~18.8 The welding on the pipeline was defective. Such welding should go up and over between two sections of pipeline and should therefore have a concave shape. As can be seen from photographs of the pipeline taken in November 2008 in the course of the clamping process, the welding on the affected sections of pipeline presented with a convex shape. Industry standard practice requires that such welds are produced in accordance with ASME B31.4, and the appearance of the upper surface of the weld should not be convex (ASME B31.4 at 434.8.6).

- 19 The Claimants aver that the TNP is well beyond its design life. Its poor state of maintenance has not permitted a viable extension of its operational life:
- 19.1 The TNP was constructed in 1963 with a design life of 30 years (Bodo Individual RRFI Question 7.4). The pipeline is now 50 years old. The TNP reached the end of its design life in 1993.
- 19.2 SPDC avers that the design life of the TNP “*is extendable depending on passing a fitness for service assessment and/or necessary remedial actions*” (Bodo Individual RRFIs Question 7.4). However, SPDC admits that it has been unable to undertake maintenance operations (such as regular intelligent pigging, six monthly cathodic protection surveys of all sections of the pipeline, and various other regular maintenance activities such as valve replacement and manifold inspection) in Bodo between 2000 and 2009 (Bodo Individual RRFIs Question 6.2). The Claimants aver that on its own case SPDC has failed to inspect properly the pipeline or take remedial action necessary to continue operating the pipeline 20 years after the end of its design life.
- 19.3 In 1995, SPDC declined to apply its programme of upgrading its oil pipelines and facilities instigated to address the need “*to renew ageing facilities, [and] reduce the number of oil spills in the course of operations*” to Bodo (SPDC, Nigeria Brief, *The Environment*, 1995).
- 19.4 The TNP, or at least sections of it in and around Bodo, has not been refurbished or updated to comply with current industry standards. This was acknowledged internally in an email dated 10 December 2009 and relating to the Second Spill (document 1077) which states, “[SPDC is] corporately exposed as the

pipelines in Ogoniland have not been maintained properly or integrity assessed for over 15 years”.

19.5 At all material times the TNP was not fit for purpose.

20 As to the contention at paragraph 88 87.6(b) of the Defence that “Shell standards were applied worldwide and all of SPDC’s assets in Nigeria were certified to ISO 14001 standard by external assessors,” it is averred:

20.1 Compliance with ISO 14001 is not mandatory. ISO 14001 simply gives guidance as to what environmental policies a company should have in place. Mandatory standards are set out in the U.S. Code of Federal Regulation 49 CFR 195.452, ASME B31.4 Code and API Code 1160 set out in Appendix A, which SPDC has failed to comply with.

21 It appears therefore that the totality of SPDC’s pipeline integrity plan in practice amounted to (i) wall thickness testing on a small section of the pipeline in the aftermath of a spill, (ii) occasional flyovers in response to some, but not all, reported incidents (Bodo Individual RRFIs Questions 9.3, 22.3) and (iii) the unsatisfactory surveillance programme dealt with below. As such, SPDC’s averment that its pipeline integrity plan complied with API 1160 and ASME B31.8S is simply untenable.

22 UNEP’s assessment of SPDC’s compliance with international standards supports the Claimants’ case:

*“The control and maintenance of oilfield infrastructure in Ogoniland is clearly inadequate. **Industry best practice and SPDC’s own documented procedures have not been applied** and as a result, local communities are vulnerable to the dangers posed by unsafe oilfield installations. The oil facilities themselves are vulnerable to accidental or deliberate tampering. Such a situation can lead to*

accidents, with potentially disastrous environmental consequences.”
(p100)

[Emphasis supplied]

Surveillance systems

23 As to the contention at paragraph 3736.12(a) and 8079.1(b) of the Defence that “*SPDC engaged members of the local communities as contractors to carry out daily inspections of the TNP in the Bodo area*”, it is averred that SPDC’s surveillance programme for the Bodo Creek was and remains inadequate. SPDC recognised that its surveillance programme was inadequate on a number of occasions, but appears to have failed to take appropriate remedial action:

23.1 On 23 November 2005, the JIV report for incident 2005_00216 noted:

“1. Surveillance needs to be intensified on the ROW;

...

3. C.R.O need to educate the community on danger of bursting pipelines.”

23.2 On 18 June 2007, the JIV report for incident 2007_00215 at B-Dere recommends: “*1. Intensify surveillance on this ROW*”;

23.3 On 18 June 2007, the JIV report for incident 2007_00214B notes: “*Need to intensify surveillance on ROW*”;

23.4 On 18 June 2007, the JIV report for incident 2007_00214A notes: “*Need to intensify surveillance on ROW*”;

23.5 On 19 June 2007, the JIV report for incident 2007_00215 at Morghor recommends:

- “1. Intensify surveillance on this ROW;
2. Clear bush on ROW.”

- 23.6 On 17 October 2007, the JIV report for incident 2007_00215 noted the “*Need to intensify surveillance on ROW*”;
- 23.7 On 22 October 2007, the JIV report for incident 2007_00335 noted the “*Need to intensify surveillance on ROW*”;
- 23.8 At a meeting between SPDC and the Bodo Community on 13 February 2009, it was resolved that: “*Failed surveillance contractors be replaced by determined new contractors.*”
- 24 SPDC’s surveillance systems were inadequate for the following reasons:
- 24.1 On the basis of the information presently in the Claimants’ possession prior to the completion of disclosure, it is averred that SPDC provided insufficient numbers of surveillance contractors in the Bodo area prior to and in the course of the 2008 Oil Spills.
- 24.2 Surveillance contractors were not provided with adequate resources to properly inspect the TNP. In particular:
- 24.2.1 To the extent that surveillance contractors were contracted to inspect water-born stretches of the TNP, they were not provided with sufficient boats. They had to use their own boats or to borrow them. As a result, surveillance contractors hired to patrol the TNP were not always able to monitor the particularly vulnerable sections of the TNP around waterways;

- 24.2.2 There was no provision of shelter for surveillance contractors inspecting water-born stretches of SPDC infrastructure, making it difficult or impossible to do so in harsh weather conditions;
- 24.2.3 Surveillance contractors were not always provided with personal protective equipment (or with sufficient personal protective equipment) thereby impacting on their ability to carry out patrols;
- 24.2.4 Surveillance contractors were provided with insufficient or inadequate training;
- 24.2.5 Surveillance contracts provided for insufficient numbers of personnel to carry out effective surveillance of stretches of the TNP. SPDC avers in paragraph ~~8079~~.1(b)(i)(1) of the Defence that its contracts “*stipulated that each kilometre of the pipeline under surveillance should be monitored by a minimum of three persons at any time on a 24 hour, seven days a week, basis*”. However, one such surveillance contract disclosed by SPDC requires that 30 persons be employed to monitor 18.14km of the pipeline, which is a requirement of less than two persons per kilometre. The surveillance contracts were not effectively implemented (see paragraphs 24.2, 24.4 and 25 of this Reply), but even if they had been, the surveillance contracts did not provide for sufficient numbers of personnel to carry out effective surveillance of the TNP.
- 24.3 It is denied, as claimed by SPDC in the Bodo Individual RRFIs Question 5.1, that SPDC only employed contractors who had been nominated by the Bodo Community. The contractors named in Bodo Individual RRFIs Questions 5.2 and 5.2(i),

Tekuru Patrick & Company and John Tekuru International Limited, were not nominated or approved by the authorised representatives of the Bodo Community.

24.4 SPDC's contention at paragraph 8079.1(b)(i)(1) of the Defence that "*SPDC employed inspectors to conduct site visits every 7 to 14 days,*" is denied. SPDC carried out no or no adequate supervision of its surveillance contractors.

25 Further, the Claimants aver that SPDC failed to implement the surveillance contracts or to ensure the contractors complied with the terms of the contracts, as is evident from the following examples:

25.1 When asked in the RFIs to indicate the number of staff employed by its contractors for surveillance in and around Bodo for the period of 2000-2009, SPDC indicated that it did not know how many staff its two contractors for the area employed (Bodo Individual RRFI 5.2(i)). This information should have been available to SPDC as its surveillance contract required contractors to provide SPDC with the following documentation in respect of each staff member: CVs, Medical Certificate of Fitness, Employment Letters and Photocopies of Staff ID. Further, each contractor had to submit a nominal roll of all its Pipeline Surveillance Team (*PST*) operatives on a monthly basis along with its invoice. This information should therefore be readily available to SPDC if it enforced its surveillance contracts. This failure is demonstrative of SPDC's lack of concern as to the effectiveness of its surveillance programme in Bodo.

25.2 One of the contractual requirements was that surveillance contractors "*submit a Serious Incident Report ('SIR') after every incident or discovery of sabotage or illegal bunkering activities... within 48 hours of such incident*", according to a format provided by SPDC. On 2 November 2012, the Claimants requested

disclosure pursuant to CPR 31.14(1)(a) of the surveillance contractor report of the leak at Sivibilagbara from 5 October 2008 referred to in paragraph 36.12(a) ~~26.11(a)~~ of the Defence. SPDC's response was that "*No such document exists. The report was made verbally by one of the contractors to SPDC*" (letter from Hogan Lovells dated 7 December 2012). If SPDC had enforced its surveillance contract, it would have had available to it a written report in respect of the leak.

25.3 The surveillance contracts specify that the contractors provide weekly reports of all activities conducted by the contractors, whereas the Bodo Individual RRFI Question 5.2(viii) indicates that the contractors only report when they observe a leak. Indeed, Bodo Individual RRFI Question 12 suggests that SPDC has no written records of any sort of surveillance reports even in relation to observed leaks.

26 Analysis of Appendix II to the Defence (list of spills pre-October 2008) and Appendix I to the Bodo Individual RRFIs (list of spills post-December 2008) shows that prior to the First Oil Spill there had been 19 spills and the average time for responding/repairing the leaks was 42.2 days, i.e. approximately 6 weeks (for the 18 spills for which a date of spill and date of repair have been provided). After the Second Oil Spill there were 38 spills and the average response/repair time was 6.6 days, i.e. less than a week. This clearly suggests that, prior to the First Oil Spill, SPDC were complacent regarding the risk from oil spills, and did not have an adequate surveillance or response system. After the 2008 Oil Spills, SPDC appears to have implemented a better and more efficient system. As such, the Claimants' contention is that SPDC's failure to respond to the spills was not significantly caused by the alleged difficulty of gaining access; it was a consequence of the poor systems SPDC had in place.

Clamping and repair methods

27 As to SPDC's case on the use of clamping as a repair technique used for both of the 2008 Oil Spills (paragraphs 3736.9 and 4544.5 of the Defence), it is averred:

27.1 SPDC has used bolted clamps as a permanent repair method. Bolted clamps are only acceptable as an emergency repair to stop leaks whilst the pipeline is being prepared for a permanent repair by the replacement of the pipeline section by the welding in of a new section of pipeline. Clamping is not acceptable as a permanent repair as clamping is not tamper-proof. API 1160 states :

"Leak clamps are used to repair leaking external corrosion pits. They are widely used on isolated pits but are considered temporary repairs lasting only until the pipe segment can be replaced. Leak clamps are distinguished from pipe clamps or sleeves due to their temporary nature. They should be used only if analysis shows that the rupture of general corrosion around the leak is impossible, or if the pressure level will remain lowered until a permanent repair is made. Leak clamps include lightweight metal bands with single draw bolts to tighten them onto a pipeline. They also include a threaded fitting located 180° from the draw bolt which is used to force a neoprene cone into the leaking pit.

27.2 By way of example, a 6" connecting pipeline between the two pipelines at the Bodo manifold is fitted with a clamp, which appears to have become a permanent feature. Clamps should only be temporary repair measures, and the defective connecting pipeline should have been replaced.

General violence

28 As to the averments in paragraph 2726.2 of the Defence that there has been a rise in violence in the Niger Delta, including a complaint that a worsening of the violence in Ogoniland from 2005 to 2008 led to SPDC restricting the number of staff and contractors who were permitted to conduct operations (paragraph 2726.4), it is averred:

28.1 SPDC's contention is at odds with its actual operations in Ogoniland during this period. Between 2005 and 2010, SPDC carried out large scale decommissioning on at least 98 oil wells. SPDC stated in a press release dated 28 September 2010 that "*improvements in security*" had enabled progress of the operation. In the same press release, SPDC also expressed thanks to "*the Rivers State Government and Eleme, Tai, Gokana and Khana local government councils, as well as traditional rulers, for their efforts in securing access.*" The completion of the operation demonstrates that SPDC was satisfied between 2005 and 2010 that it had adequate access and security conditions.

28.2 SPDC rely on an incident at Alakiri flowstation in September 2008 to justify the restriction on the number of its staff permitted to operate in the Bodo area (Bodo Individual RRFIs Question 1.1). The Alakiri flowstation is located approximately 19 km away from Bodo, a distance separated by a major water channel (the Okrika estuary) and a waterway. The Alakiri flowstation is not in Ogoniland. It is denied that such an incident could justify a lapse in pipeline integrity and maintenance systems in and around Bodo.

28.3 The additional security measures taken by SPDC in December 2008 in response to an increased perceived threat to the security of its staff and contractors, and which restricted their movements within Ogoniland (Bodo Individual RRFIs Question 1.1), postdate the First Oil Spill. Such security measures cannot

therefore be an explanation for the failure to prevent and rapidly detect and to repair the First 2008 Oil Spill.

28.4 Whilst attacks on the pipeline network have occurred elsewhere in the Niger Delta, Bodo Creek was not an area known for violence against oil industry property or staff.

28.5 Further, SPDC's security policy change in December 2008 for its internal staff and contractors was not occasioned by the Bodo Community. For the reasons set out further in paragraphs 29-35 below, Bodo was not an area presenting a security risk, or perceived as presenting a security risk by SPDC.

28.6 SPDC's awareness of such problems warranted adaptations and improvements in SPDC's integrity management, as required by the CFR, ASME and API codes set out above.

Security issues in Bodo

29 As to the complaint at paragraph ~~8079~~ 8079.1(b)(ii) of the Defence of "*difficulties of access near Bodo,*" it is denied that the Bodo Creek presented difficulties of access which would have prevented SPDC from fully its implementing pipeline maintenance and integrity systems.

30 Bodo Creek was not an area known for violence against oil industry property or staff. In fact, the Bodo community was given an award by SPDC for being the most peaceful Ogoni community in 2009.

31 SPDC did not perceive Bodo as an area presenting a security risk: on 10 December 2008, an SPDC internal document describes Bodo as having a "stable leadership and with good contacts for use" (document 3769). SPDC's minutes of a meeting between SPDC and the Bodo Community on 13 February 2009 record that SPDC "*Commended the Bodo community for their support*" (document 1646). On 5 May 2009,

an SPDC inter-office memo described Bodo as having “remained peaceful despite these non-sabotage spill incidents” (document 1240). Indeed, between July and August 2009, the security situation in Bodo was such that SPDC approved visiting Bodo without a Joint Task Force (“JTF”) escort (document 1307).

32 On SPDC’s own case, its Operations Team had regular access to its manifolds, making untenable its averment that it could not access its facilities near Bodo in order to implement its maintenance and integrity systems:

32.1 SPDC avers that it was its *“policy and practice to shut down the relevant flow station and/or isolate the relevant section of the pipeline as soon as reasonably possible on the detection or the reporting of a leak”* (Bodo Individual RRFIs Question 10.1).

32.2 SPDC further avers that it *“expected that its policies and practices, including those relating to shut down and isolation, would invariably be followed”* (Bodo Individual RRFIs Question 10.1 (iii))

32.3 SPDC also avers that the pipeline was *“isolated by shutting isolation valves upstream and downstream of the spill point. Such valves are situated at the Bomu manifold, the Patrick Waterside Manifold, the Opobo Channel, the Bonny Tie In Manifold and the Bonny Terminal”* (Bodo Individual RRFIs Questions 17.1, 32.1). It follows that access was required to all of these facilities in order to operate manually the isolation valves.

32.4 SPDC avers that *“the pipeline was, as was usual practice, depressurised shortly after isolation. Such depressurisation would have been effected at one or more of the manifolds”* (Bodo Individual RRFI Question 32.3).

- 32.5 In order to re-open the pipeline after isolation, SPDC avers that its process is for “*members of the Operations Team [to] visit the manifold and remove the spade that was used to positively isolate the valve, and open the valve*” (Bodo Individual RRFIs Question 10.3 (iii)).
- 32.6 Paragraph ~~2726~~ 2726.7(f)(ii) of the Defence discloses that there were 63 spills on the 24” Pipeline from 2000 to 2010 alone. It follows that SPDC’s Operations Team, in applying its own policy of isolating the pipeline for each spill incident, would have needed to gain access to its facilities on at least 63 occasions to close the isolation valves at the manifolds and depressurise the pipeline, and on a further 63 occasions to re-open the pipeline after repairs, i.e. an average of one trip to the manifolds per month over the ten year period.
- 32.7 If SPDC’s Operations Team could access its facilities in order to apply its policy in respect of isolation, it follows that SPDC staff could equally access the facilities in order to apply its pipeline integrity and maintenance systems.
- 32.8 Further, SPDC avers in paragraph ~~8079~~ 8079.1(b)(i)(1) of the Defence that it employed contractors to keep each kilometre of pipeline under surveillance by a minimum of three persons at any time on a 24 hour, seven days a week, basis. If that is correct, there is no reason why SPDC could not employ contractors or staff to man and protect its flow stations and manifolds from theft or sabotage on a 24 hour, seven days a week, basis.
- 33 SPDC’s record of operations also shows that SPDC had ready access to its facilities in and around Bodo. SPDC was able to repair the great majority of spills occurring between April 2009 and November 2012 (as listed in Appendix I of the Bodo Individual RRFIs) within 14 days of the

spill date. SPDC would have required easy access to its facilities in and around Bodo in order to effect repairs within such timeframes. As set out in paragraph 26 above, the change in SPDC's response performance before and after the 2008 Oil Spills shows that the issue was not a matter of access, but one of the effectiveness of SPDC's leak detection, surveillance and response systems.

34 SPDC's reliance on purported security or access issues to justify its failings in responding to the two leaks is without merit. See paragraphs 68 to 71 below.

35 Further, SPDC staff were accompanied by members of the JTF for every journey carried out in Ogoniland. The JTF were armed and had access to all parts of Ogoniland. By contrast, the residents of Bodo are a civilian population, consisting mostly of subsistence fishermen and their families, who do not constitute an armed threat. It is denied that SPDC staff was unable to access SPDC facilities in such circumstances.

Illegal activities of third parties

36 As to the allegation in paragraph 8887.4(b) of the Defence that 63 leaks occurred on the 24" Pipeline between 2000 and 2010, of which 51 were caused by the illegal activities of third parties, it is averred:

36.1 The location of the leaks is unspecified.

36.2 In the absence of the JIV reports for each of the 63 leaks, the Claimants do not accept that 51 of the leaks were caused by the illegal activities of third parties.

36.3 In any event, for the reasons set out in paragraph 6 above, the Claimants contend that information provided by SPDC as regards spills in and around Bodo is inherently unreliable (in

relation to their number, causes, start and repair dates and location).

36.4 As set out in paragraph 5 above, the alleged rate of pipeline incidents on the 24" Pipeline outstrips the rate of incidents (including those caused by third parties) found for pipeline in European countries. Regardless of the cause, the rate of spillage on the TNP has remained unacceptably high.

37 Further, it is the Claimants' case that SPDC took insufficient steps to protect the integrity of the pipeline from the known risk of illegal tampering, such as:

37.1 Leak detection systems including:

37.1.1 Flow and pressure monitoring instruments, and

37.1.2 The provision of tamper-proof cabinets to prevent theft of or damage to such instrumentation, which SPDC alleges has taken place;

37.2 Illegal tapping detection systems which detect the noise of digging to the pipeline and that of hitting the pipeline;

37.3 The use or effective use of security contractors, Nigerian police or JTF to protect the manifolds and pipelines from the risks alleged by SPDC, such as sabotage or theft;

37.4 Weekly helicopter flyovers (as recommended by UNEP);

37.5 Immediate shutting down of the pipeline when interference was detected;

37.6 The performance of Environmental Impact Assessments at the end of the TNP's 30 year design life to investigate known problems and produce recommendations to maintain the

integrity of the pipeline system, including manifolds such as Bomu;

37.7 The addition of protection to the pipeline in the form of reinforced concrete fill over the length of the pipeline, or at the very least on locations where illegal tapping was found and repaired, or at waterway crossings where the pipeline was known to be particularly vulnerable;

37.8 More generally, a comprehensive and effective surveillance program, formulated by reference to an intelligence-driven, risk-based approach that protects and monitors areas of vulnerability, and includes effective community engagement strategies.

(B) ALLEGED PRIOR & OTHER SOURCES OF DAMAGE

Other sources of damage

38 As to the contention in paragraph 2726.8 of the Defence (reiterated at paragraph 4948.3(b) of the Defence) that "*large scale industrial enterprises including breweries, paint factories, cement and asbestos factories in Rivers State also generate and discharge waste materials which detrimentally affect the environment,*" it is averred:

38.1 Rivers State has an approximate surface area of 11,077 km². SPDC has provided no detail as to where or when in the State any such alleged pollution has occurred. It is denied that Bodo Creek was affected by any such sources of pollution.

39 As to the specific allegation in paragraph 4948.3(b) of the Defence that marine life in the Bodo Creek was damaged by dredging activities:

39.1 It is denied that the construction of the Gitto Road, which runs through Bodo Creek, would have caused any, or certainly any significant damage, to the mangroves in the vicinity of the road.

39.2 In any event, the road was never finished and construction stopped in around 2006. It is denied that the construction of the road caused any, or any significant damage, to the Bodo Creek.

40 As to the specific allegation in paragraph 4948.3(c) of the Defence that marine life had been damaged in the Bodo Creek by overfishing, it is averred:

40.1 As is consistent with artisanal fisheries in many parts of the world, overfishing has been an issue for a number of years in the Niger Delta and has caused a slow reduction in fish populations over a number of years. However, artisanal fishing does not cause more than incremental reductions in fish stocks, in contradistinction to industrial fishing, which did not occur in Bodo. Marine life in Bodo Creek prior to the 2008 Oil Spills had been and continued to be sufficiently plentiful to constitute a sustainable source of food and livelihood for the Claimants and their predecessors for many generations. Overfishing was not the cause of the sudden and substantial loss of marine life which occurred after the 2008 Oil Spills.

40.2 The Resource Damage Assessment⁵, referred to in subparagraph (i) of the Defence, refers to "*fishing by commercial trawlers*." This is not applicable to the Bodo Creek as commercial trawling is a fishing method which is not and could not be practiced in Bodo Creek because it is too shallow for trawlers to operate within its waterways.

⁵ Niger Delta Natural Resource Damage Assessment and Restoration Project. Federal Ministry of Environment, Abuja. 31 May 2006.

40.3 The observation, quoted from the environmental study by Zabbey⁶, referred to in sub-paragraph (iii), that the cockle is overfished in Bodo Creek is specifically restricted to one species of marine life, the bloody cockle, and does not extend to other species in Bodo Creek such as periwinkles or fish.

Prior sources of damage

41 The contention in paragraphs ~~32-31~~ to ~~35-34~~ of the Defence that by 2008 the Bodo Creek “*had been detrimentally affected by the cumulative effect of oil released over many years from different sources but predominantly as the result of illegal activities of the types pleaded above – namely sabotage, illegal bunkering, illegal refining and/or illegal transportation,*” is rejected for reasons set out in paragraph 21 of the Particulars of Claim and the evidence already provided to SPDC showing that the fauna and flora of Bodo Creek was healthy prior to the 2008 Oil Spills⁷.

42 As to the specific allegation in paragraph ~~33-32~~ of the Defence that “*before the 2008 Oil Spills, at least twenty incidents of sabotage or illegal bunkering occurred in respect of its pipelines in the area of and surrounding Bodo with resultant leakage of oil into the environment*”, and the list in Appendix II to the Defence, it is averred:

⁶ *Community ecology of intertidal macrozoobenthos at Bodo Creek, Nigeria*, Department of Animal and Environmental Biology, University of Port Harcourt, Nigeria.

⁷ *Water quality of Bodo Creek in the lower Niger Delta basin*, American-Eurasian Network for Scientific Information [2008]; “*Population structure, biomass and production of the West African lucinid Keletistes Rhioecus in Sivibilagbara swamp at Bodo Creek, Nigeria*”, *Hydrobiologia* [2010] 654; *Epifauna diversity and ecology on intertidal flats in the tropical Niger Delta*, *Journal of Marine Biological Association of the United Kingdom* [2011]; “*Community ecology of intertidal macrozoobenthos at Bodo Creek, Nigeria*”, Department of Animal and Environmental Biology, University of Port Harcourt, Nigeria. Copies of these academic studies have been provided to SPDC as part of pre-action disclosure.

- 42.1 None of the spills listed in Appendix II had any impact on the environmental integrity of the Bodo Creek beyond that accepted in the Particulars of Claim at paragraph 21.
- 42.2 Of the 19 alleged incidents in Appendix II to the Defence, occurring over a period of 8 years from 2001 to 2008, nine occurred on land. There is no evidence suggesting that these land-based spills had any environmental impact on Bodo Creek. Further, of the 19 alleged spills in Appendix II, the terrain for five spills is described as 'currently unavailable'.
- 42.3 Of the 19 alleged incidents, two spills in 2003 and 2005 respectively have a confirmed location in the swamps, and one in 2008 has a location in "*land and swamp*". In respect of these three spills, it is averred:
- 42.3.1 The 'swamp' spill in 2003: Incident 2003_00013 occurred on the 24" Nkpoku-Bomu Trunkline which is located on landed area north of the Bomu Manifold and is a considerable distance away from the Bodo Creek. To the degree that the area is swampy, it is denied that there is any hydrological continuity between swamp land at this spill site and the Bodo Creek and therefore that this spill had any impact on the Creek;
- 42.3.2 The 'swamp' spill in 2005: Incident 2005_00230 occurred on Bonny Island, where it caused localised damage. Bonny Island is separated from Bodo territory by the Opobo channel, which is a large waterway. There is no evidence that this spill caused any damage across the Opobo channel in Bodo territory.
- 42.3.3 The 'land and swamp' spill in 2008: Details of Incident 2008_00168 were disclosed to UNEP in September

2010 and to the Claimants in 2011. Those details indicated that the co-ordinates of this spill were exactly the same as those given for the First Oil Spill in the Defence at paragraph 3736.11(a). Further, the repair date for this spill is the same as that of the First Oil Spill (i.e. 7-8 November 2008). It appears that SPDC duplicated the First Oil Spill in error as a separate incident. SPDC's confusion regarding this spill has been compounded in Appendix II, where the co-ordinates now given for this spill have been changed, but are now exactly the same as those given for Incident 2007_00214 in the same Appendix. This would seem unlikely to be truly the case given that these two spills, according to the same Appendix, took place on different pipelines.

42.4 As to the volume of oil spilled,

42.4.1 For 17 of the 19 alleged incidents, SPDC recorded the spill volume as 250 barrels or less⁸, or no spill volume was recorded.

42.4.2 For those spills where SPDC recorded a spill volume, these range from 5 barrels to 2,500 barrels spilled, the average being 233 barrels.

42.4.3 The aggregate amount of oil spilled for all 19 incidents, according to SPDC, is 4,201.9 barrels between 2001 and 2008. By way of contrast, the Claimants contend that oil spilled from the First Oil Spill at an approximate

⁸ Incidents numbered 2007_00214 and 2007_00215 cover five spills. Whilst Appendix II to the Defence only provides an aggregate spill volume for each incident, the original Appendix II to the Individual Defence provided the spill volume for each spill

rate of 3,900 barrels per day, totalling 280,000 barrels over 72 days.

42.5 In respect of all of the spills listed in Appendix II to the Defence, SPDC avers that steps were taken to remediate the spills, including *“recovery operations by local contractors of Clean Nigeria Associates (“CNA”) or SPDC; and/or clean-up by local contractors or CNA or SPDC and/or remediation using RENA and/or the certification thereof by the National Oil Spill Detection and Response Agency (“NOSDRA”)”* (Bodo Individual RRFIs Question 11.6(ii)). If such steps took place as SPDC avers, the environment surrounding Bodo would have been preserved from the effects of such prior spills in any event.

42.6 It is therefore denied that these incidents constitute evidence that the Bodo Creek was contaminated by these oil spills prior to 2008.

43 As to the specific allegation in paragraph ~~3534~~.1 of the Defence (reiterated in paragraph ~~5049~~.3(c)) that the video footage of dead mangrove along the banks of the Bodo Creek on 15 October 2008 is *“inconsistent with the Claimants’ case that the Bodo Creek was environmentally sound prior to the 2008 Oil Spills,”* it is averred:

43.1 The death of mangroves within 6 weeks of being exposed to oil (if, as the Claimants contend, the First Oil Spill occurred on 28 August 2008) is consistent with mangrove ecology and the fact that defoliation of mangroves can occur within 15-30 days of impact;

43.2 The video footage referred to shows partially defoliated mangrove;

43.3 Light crude oil, such as that carried in the TNP, is more acutely toxic to mangroves than other types of crude oil. Adverse effects on mangroves can be noticed after exposure to small amounts of light crudes even after only brief periods of time;

43.4 The video footage of partially defoliated mangrove is therefore entirely consistent with the Claimants' case as to when the spill started.

44 The specific reliance in paragraph ~~35~~34.2 of the Defence on the statement made by the elderly man in the October 2008 video footage to the extent that he was aware of the existence of 8 spills prior to the 2008 Oil Spills demonstrates the inadequacy of SPDC's knowledge regarding the operation of the TNP pipeline. It is averred:

44.1 The statement was made by an elderly individual, with no specificity as to the time and location of prior spills.

44.2 SPDC has stated in the Bodo Individual RRFIs that it relies on the statement "*to support the averment that various other polluting events had a detrimental effect on the local environment*", but that it does not know which particular spills were being referred to (Bodo Individual RRFIs Question 14).

44.3 SPDC is responsible for the operation of the pipelines. Part of that responsibility is to ensure that it knows when and where leaks occur and to ensure the leaks are subsequently repaired and the area cleaned up. It is quite unclear what value SPDC puts on the statement. Either SPDC avers that there is the genuine prospect that this man has located spills that they have never been aware of, and are not listed in their Appendices, in which case this would indicate a gross dereliction of its responsibilities; or it is simply a reference to oil spills already

referenced in their Appendices in which case it has no added value.

44.4 If SPDC does consider that it is possible that this man has identified leaks that have occurred and of which it was unaware, then this should be explicitly pleaded so that the court is fully aware of its case on this point.

45 As to the surveys referred to in paragraphs ~~35~~34.3 and ~~36-35~~ of the Defence, listed in Appendices III and IV to the Defence the Claimants maintain that the said surveys are probative of the sound condition of Bodo Creek prior to the 2008 Oil Spills. These surveys are authoritative, being published by well-established academic centres or peer-reviewed publications such as *Hydrobiologia* and the *Journal of Marine Biological Association of the United Kingdom*.

46 As to the contention in paragraph ~~50~~49.3 of the Defence that “*the mangrove population of the Bodo Creek was detrimentally affected as a result of oil spills caused by illegal activities,*” it is averred:

46.1 The report referred to in sub-paragraph (a)(ii) of the Defence refers to a section of “*120 m long of mangrove fringing Bodo*” having died out as a result of a spill in August 2003. By 2005, the Centre for the Environment, Human Rights and Development (‘CEHRD’), a local NGO, had replanted mangroves over the damaged area. Pictures taken three weeks prior to the First Oil Spill show that the mangroves were re-growing well. Any damage to the mangrove caused by the small-scale spill in August 2003 had been repaired. Further photographs from this re-vegetated area taken during or after the 2008 Oil Spills show that the mangroves had been freshly re-oiled and damaged.

46.2 The CEHRD report dated 10 October 2008, relied on in sub-paragraph (b) of the Defence, documents the devastation of the

ecosystem, including the mangroves, caused by the First Oil Spill itself. The damage described therein cannot properly be relied on to suggest that the mangroves of Bodo Creek were detrimentally affected by oil spills prior to 2008.

46.3 The reliability of the Pre Clean Up Assessment Report relied on in sub-paragraph (d) of the Defence is contested for the reasons set out in paragraphs 64-67 below. The Pre Clean Up Assessment Report is not an impartial document to the extent that it was drafted by staff members of SPDC, and cannot therefore be considered as an independent source.

46.4 The UNEP report referred to in sub-paragraph (e) does not refer to the Bodo Creek specifically, but to Ogoniland generally. The UNEP report, which was published in August 2011, includes a specific case study of artisanal refining at Bodo West that incorporated site visits and remote sensing analyses using historic and current satellite imagery. The study indicates:

46.4.1 There was no artisanal refining taking place in Bodo West in 2007. However, artisanal refining was identified in the UNEP report as having proliferated between January 2009 and January 2011. It is the Claimants' case that (i) any illegal refining of oil in Bodo Creek only occurred after the 2008 Oil Spills, such that Bodo Creek was not already damaged as a result of illegal refining prior to the 2008 Oil Spills, and (ii) illegal refining began as a result of the 2008 Oil Spills which deprived the Bodo community of its main livelihood in the fisheries, leading to a small number of local people engaging in illegal refining (p.165 of the UNEP report). The UNEP report states that "*during the remote sensing analyses of Ogoniland undertaken concurrent to field work, it was observed that there is a very rapid proliferation of the*

refining activities in Ogoniland in the past two years". The repeated reliance by SPDC on the UNEP report to support its contention that illegal refining was the main cause of environmental damage (see for example the Defence at paragraph 5453.3) disregards the report's key factual findings that illegal refining was not occurring in Bodo in 2007 and did not start before 2009 (p. 165).

46.4.2 Further, UNEP identified artisanal refining taking place in and around a defunct oil well at Bodo West, which had not been properly secured by SPDC, thereby allowing anyone to tap into the wells with little or no technical expertise. The UNEP report states (p 101): "*A number of defunct SPDC oil wells are located in the Ogoniland creeks. However, the wells still contain oil and are self-flowing, such that by operating the well valves, crude oil (along with gas and water) can be produced. During one visit the assessment team observed a group of people tapping into these wells and transferring oil to small boats.*" The Claimants contend that SPDC must bear responsibility for leaving its oil facilities unsecured and vulnerable to accidental or deliberate tampering in a highly sensitive ecosystem. It appears that the oil wells at Bodo West were only secured in late 2010.

(C) EXTENT OF THE FIRST SPILL

Start date of the spill

47 As to the contention in paragraphs 3736.4 and 3736.12 of the Defence that the First Oil Spill occurred on 5 October 2008:

- 47.1 SPDC's surveillance contractors, relied on in sub-paragraph (a) as first reporting the spill on 5 October 2008, cannot have been a reliable source as to when the First Oil Spill occurred because they only started operating in any significant way in 2009, were at all times insufficient in number, and did not patrol the whole of the TNP. SPDC recognises that its reliance on this date is entirely dependent upon information from surveillance contractors, in stating that "*SPDC therefore assumes that the date of reporting is the date of commencement of the spill*" (Bodo Individual RRFIs Question 15(ii)).
- 47.2 The commentator on the video filmed on 15 October 2008, relied on in sub-paragraph (b) as stating that the spill occurred two or three weeks previously, is not a reliable source as to when the spill began.
- 47.3 As to the documents relied in sub-paragraph (c),
- 47.3.1 They are internal SPDC documents or produced by or for SPDC. It is accepted that SPDC formed an early view that the spill occurred on 5th October 2008 and this date was then used in many subsequent SPDC documents. This does not constitute an independent source of evidence capable of supporting SPDC's view.
- 47.3.2 The documents conflate the start date of the spill with SPDC's claimed reporting date of 5 October 2008 as set out in sub-paragraph (a), as admitted in Bodo Individual RRFIs Question 15(ii).
- 47.3.3 As such, the documents merely repeat the view held by SPDC that the spill started on 5 October 2008. They do

not constitute or stem from a fresh investigation as to when the spill started.

48 Further, SPDC claims in paragraph 3736.3 of the Defence that the 24" Pipeline had been isolated since 3 October 2008, "*significantly reducing the amount of oil that could escape from the 24" Pipeline*" (paragraph 3736.4 of the Defence). This contention undermines SPDC's case that the First Oil Spill started on 5 October 2008 because:

48.1 The discovery of the leak on 5 October 2008 is entirely inconsistent with SPDC's own case that the pipeline was isolated, as no oil or very little oil would have been able to escape, such as to be noticed as a leak, from a leak point situated at 12 o'clock on the pipeline, that is, directly on the top face of the pipeline, two days after it had been isolated.

48.2 SPDC avers that shortly after isolation the 24" Pipeline was depressurised (Bodo Individual RRFIs Question 17.2). Once depressurised, there would be no pressure within the pipeline to force any remaining oil out of the pipe, even less so against and through the pressure imposed by the watery swamp in circumstances where the pipeline is buried approximately 1 to 1.5 metres below the ground, as set out in paragraph 2928.4 of the Defence. Therefore a leak could not have arisen or been noticed two days after isolation and depressurisation.

48.3 SPDC have admitted at paragraph 3736.11(a) of the Defence that the cause of the First Oil Spill was a weld defect in the 24" Pipeline. SPDC contends that "*in the nature of such a weld defect, the holes would have started as pinholes which would have been gradually increased in size as the weld was eroded by escaping oil*" (paragraph 4140.2(b)(iii) of the Defence). On SPDC's case as to how the spill point formed, any such pinholes would not arise and certainly would not have continued to erode

in circumstances where the pipeline had been isolated and depressurised. The leak could therefore not have arisen on 5 October 2008 when the pipeline was purportedly isolated and depressurised.

48.4 SPDC further avers that oil would have continued to leak from the spill point notwithstanding isolation and depressurisation, due to variations in the gradient of the pipeline (Bodo Individual RRFIs Question 18.2). It is averred that, a pinhole leak could not have developed into a much larger leak merely under the gravitational pressure of oil flowing by reason of variations in the gradient of the pipeline.

48.5 In any event, the 24" Pipeline runs through an area of land and water that is fundamentally level ground, such that no appreciable pressure on the oil in the pipeline would have been exerted by reason of variations in the gradient of the pipeline, as SPDC contends.

49 As to the denial in paragraph ~~7675~~.1 of the Defence that the 2008 Oil Spills resulted from erosion (meaning corrosion), the basis for SPDC's denial is unspecified and as such the Claimants are unable to plead in response to it.

50 SPDC's contention in paragraph ~~3736~~.12 of the Defence that the First Oil Spill started on 5 October 2008 is also unreliable in view of the following:

50.1 The data provided by SPDC to UNEP does not include any spill with a start date of 5 October 2008, or even approximating to that date.

- 50.2 However, a different spill, with a start date of 4 August 2008 (incident number 2008_00168) is listed in the UNEP data as having:
- 50.2.1 The same GPS coordinates as the First Oil Spill provided by SPDC in paragraph ~~26.10~~ 36.11(a);
 - 50.2.2 The same JIV date as the First Oil Spill, namely 7-8 November 2008 (in circumstances where a JIV date over two days is highly unusual).
- 50.3 On a map of Bodo disclosed to the Claimants by SPDC in December, incident number 2008_00168 is situated on the map at the same location as the First Oil Spill.
- 50.4 In the course of site visits carried out by UNEP investigators in Bodo on 19 March 2010, UNEP noted that the spills occurred in August 2008 and December 2008.
- 51 The Claimants' case that the First Oil Spill started in August 2008 is supported by the following:
- 51.1 The fact that Chief Kottee, SPDC's community liaison officer in Bodo, attempted to contact SPDC to inform them of the leak in late August and, on his failure to obtain a response, that he travelled to Port Harcourt to inform them in person;
 - 51.2 An email from Dr Nennibarini Zabbey to a colleague dated 24 September 2008 referring to "*an ongoing spillage within the Bodo Creek basin for over a month now*";
 - 51.3 A diary entry from Borge Paago, a youth representative of the Bodo community, dated 10 October 2008, referring to an oil spill site visit. A further entry on 14 October 2008 refers to an