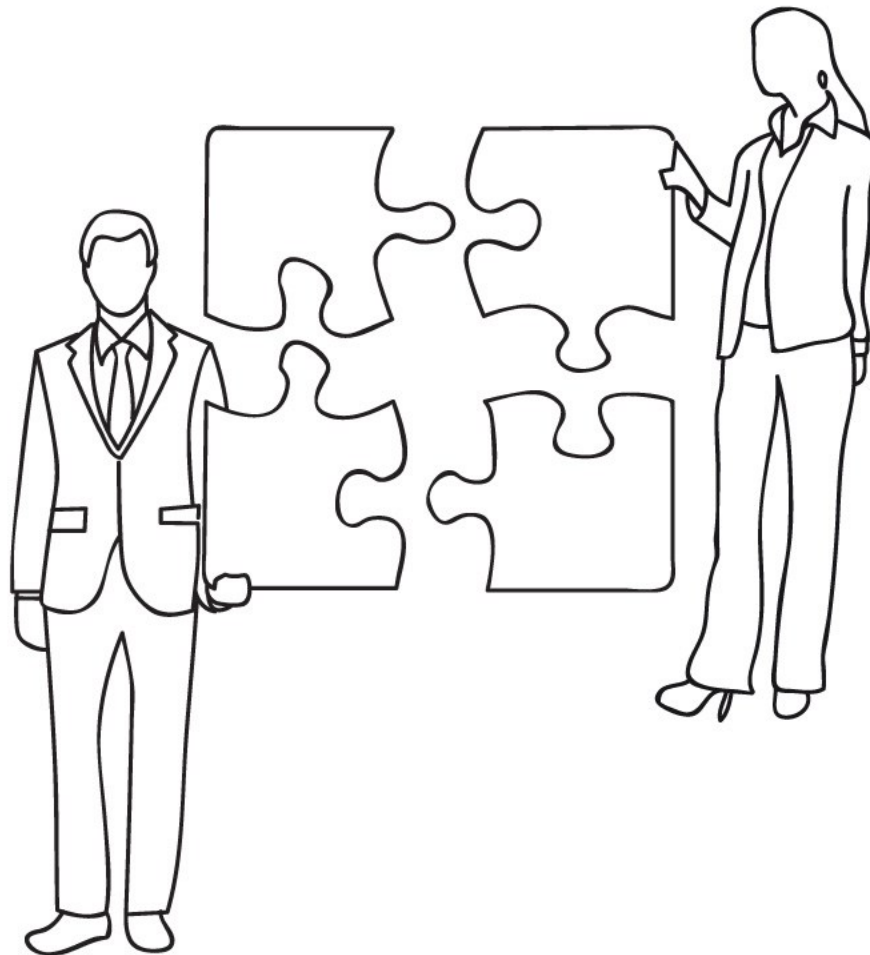


# Report

2016 Annual Environmental Report rev 01-  
OCTP Phase 2



eni

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**TABLE OF CONTENT**

<b>1</b>	<b>OBJECTIVE</b> .....	<b>6</b>
<b>2</b>	<b>SCOPE</b> .....	<b>6</b>
<b>3</b>	<b>INTERNAL REFERENCES</b> .....	<b>6</b>
<b>4</b>	<b>EXTERNAL REFERENCES</b> .....	<b>7</b>
<b>5</b>	<b>ACRONYMS</b> .....	<b>7</b>
<b>6</b>	<b>DEFINITIONS</b> .....	<b>8</b>
<b>7</b>	<b>INTRODUCTION</b> .....	<b>9</b>
7.1	ONSHORE RECEIVING FACILITY (ORF) .....	11
<b>8</b>	<b>OPERATIONAL SUMMARY AND EVENTS</b> .....	<b>11</b>
8.1	ORF EARLY-WORKS.....	11
8.2	DEVELOPMENT DRILLING AND COMPLETIONS (NAG WELLS).....	12
8.3	DRILLING EQUIPMENT.....	14
<b>9</b>	<b>ENVIRONMENTAL MANAGEMENT</b> .....	<b>14</b>
9.1	ENVIRONMENTAL MANAGEMENT STRUCTURE.....	14
9.2	ENVIRONMENTAL MONITORING.....	16
9.2.1	<i>WATER USED AND DISCHARGED</i> .....	17
9.2.2	<i>WASTE MANAGEMENT</i> .....	17
9.2.2.1	Waste Quantities Generated and Discharged .....	18
9.2.3	<i>EMISSIONS TO AIR AND AMBIENT AIR QUALITY</i> .....	19
9.3	ENVIRONMENTAL INITIATIVES .....	19
9.4	INSPECTIONS, AUDITS AND REGULATORY VISITS .....	20
9.4.1	<i>INTERNAL AUDIT</i> .....	21
9.4.2	<i>EXTERNAL AUDITS</i> .....	21
9.4.3	<i>ISO 14001</i> .....	21
9.4.4	<i>EPA VISIT – ORF</i> .....	22
<b>10</b>	<b>ENVIRONMENTAL INCIDENTS</b> .....	<b>22</b>
<b>11</b>	<b>SAFETY EXCLUSION ZONE</b> .....	<b>25</b>
<b>12</b>	<b>EMERGENCY PREPAREDNESS</b> .....	<b>26</b>
<b>13</b>	<b>SUSTAINABILITY &amp; COMMUNITY ENGAGEMENT ACTIVITIES</b> .....	<b>26</b>
13.1	COMMUNITY ENGAGEMENTS .....	27
13.2	EARLY WORKS COMMUNITY ENGAGEMENTS .....	28
13.3	SUSTAINABILITY AWARENESS FOR CONSTRUCTION TEAMS.....	28
13.4	LIVELIHOOD RESTORATION PLAN .....	29
13.5	GRIEVANCES MECHANISM.....	29
<b>14</b>	<b>CONCLUSION</b> .....	<b>30</b>



**LIST OF TABLE**

*Table 1: NAG Wells Drilled In 2016* ..... 14

*Table 2: Water Used* ..... 17

*Table 3: Waste Water Treated* ..... 17

*Table 4: Waste Generated* ..... 19

*Table 5: Air Emissions* ..... 19

**LIST OF FIGURES**

*Figure 1: OCTP Block Area* ..... 9

*Figure 2: Overview of ORF* ..... 12

*Figure 3: Schematic Layout-Phase 2* ..... 13

*Figure 4: Maersk Voyager* ..... 14

*Figure 5: Waste Management Hierarchy* ..... 18

*Figure 6: Grievance Mechanism* ..... 30



## 1 OBJECTIVE

This report is in accordance with the requirements of the following documents:

- Environmental Protection Agency (EPA) Environmental Permit to undertake the proposed Construction, Installation and Commissioning of Offshore and Onshore (Gas Receiving Facility) infrastructure for the OCTP Block Phase-2 Development Block Phase-2 Development issued on July 24th, 2015 (Permit no. CE00217801152);
- EPA Environmental Permit to undertake drilling of thirteen (13) development wells in the OCTP Block issued on June 8th 2015 (Permit no. CE00217801143);
- EPA Environmental Permit to undertake drilling of five (5) additional development wells in the OCTP Block issued on May 27th 2016 (Permit no. CE00217801158) and;
- Regulation 25 of the Environmental Assessment Regulations 1999 (LI 1652).

Eni Ghana Exploration & Production (“Eni Ghana”) issued this Annual Environmental Report (AER) which presents environmental activities on the Offshore Cape Three Points (OCTP) Block and Onshore Receiving Facility, Sanzule conducted by Eni Ghana from January through December, 2016.

## 2 SCOPE

The present Annual Environmental Report provides the description of Eni Ghana’s environmental activities conducted in 2016 for Phase 2 of the OCTP project.

## 3 INTERNAL REFERENCES

[Ref.A1]	“Eni Ghana IMS”
[Ref.A2]	Well Summary Reports for SNK E-D, SNK- 2AST 2, SNK E-C
[Ref.A3]	Environmental and Social Impact Assessment Doc. 000415_DV_CD.HSE.0304.000_00
[Ref.A4]	pIn ms hse 020 eni Ghana r00 - Environmental Management Plan



#### 4 EXTERNAL REFERENCES

[Ref.B1]	EPA - Environmental Permit: CE00217801152, CE00217801143, and CE00217801158
[Ref.B2]	EPA Guidelines on Environmental Assessment and Management for Offshore Oil & Gas Development in Ghana (2011).
[Ref.B3]	Environmental Management Plan-Desimone Ltd.

#### 5 ACRONYMS

<b>AER</b>	Annual environmental reports
<b>bbf.</b>	Barrel
<b>CAR</b>	Corrective Action Requested
<b>CI</b>	Community Investment
<b>CLO</b>	Community Liaison Officer
<b>DCE</b>	District Chief Executive
<b>DSL</b>	De Simone Limited (Early Works Contractor)
<b>EIA</b>	Environmental Impact Assessment
<b>EMS</b>	Environmental Management System
<b>EPA</b>	Environmental Protection Agency
<b>ERP</b>	Emergency Response Plan
<b>ESAP</b>	Environment & Social Action Plans
<b>E&amp;S</b>	Environmental and Social
<b>FPSO</b>	Floating Production Storage Offloading
<b>GES</b>	Gas Export Sealine
<b>GNGC</b>	Ghana National Gas Company

<b>GNPC</b>	Ghana National Petroleum Corporation
<b>HSE</b>	Health, Safety and Environment
<b>HSEQ</b>	Health, Safety Environment and Quality
<b>IMS</b>	Integrated Management System
<b>ISO</b>	International Standard Organization
<b>JV</b>	Joint Venture
<b>MCE</b>	Municipal Chief Executive
<b>MoU</b>	Memorandum of Understanding
<b>NAG</b>	Non Associated Gas
<b>OCTP</b>	Offshore Cape Three Points
<b>OSRL</b>	Oil Spill Response Limited
<b>POD</b>	Plan of Development
<b>PTW</b>	Permit to Work
<b>TBTs</b>	Tool Box Talks
<b>TSF</b>	Temporal Site Facility
<b>WTN</b>	Waste Transfer Note

## 6 DEFINITIONS

<b>Company</b>	Eni Ghana employees & assets engaged in the oil & gas operations
<b>Contractor</b>	An outside Company awarded a contract by the Company to perform a defined portion of work or to provide services or facilities
<b>Environmental aspects</b>	Elements of an organization's activities or products or services that can interact with the environment





<b>Environmental impact</b>	Any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organization’s environmental aspects
<b>ESHIA</b>	Environmental, Social, Health Impact Assessment. Process for predicting and assessing the potential environmental social and health impacts of a proposed project, evaluating alternatives and designing appropriate mitigation, management and monitoring measures
<b>Incident</b>	Any accident or injury that disrupt the normal operations development. In this definition “near misses” are included.
<b>Near Miss (NM)</b>	An unplanned or uncontrolled event or chain of events that has not resulted in a recordable injury, illness or physical damage or environmental damage but had the potential to do so in other circumstances.

## 7 INTRODUCTION

The Offshore Cape Three Points (OCTP) development license is located approximately 60 km off the coast of the Western Region of the Republic of Ghana.

The license is for developing oil and gas and the joint venture (JV) is composed of Eni Ghana Exploration and Production Limited (“Operator”) holding 44.444% participating interest (PI) Vitol Upstream Ghana Limited (“Vitol”) holding 35.556% (PI), and Ghana National Petroleum Corporation (GNPC) holding 20% (PI) with 15% carried and 5% paid.

Figure 1 presents a schematic of the overall development and approximate location (Phase 2 elements in yellow).

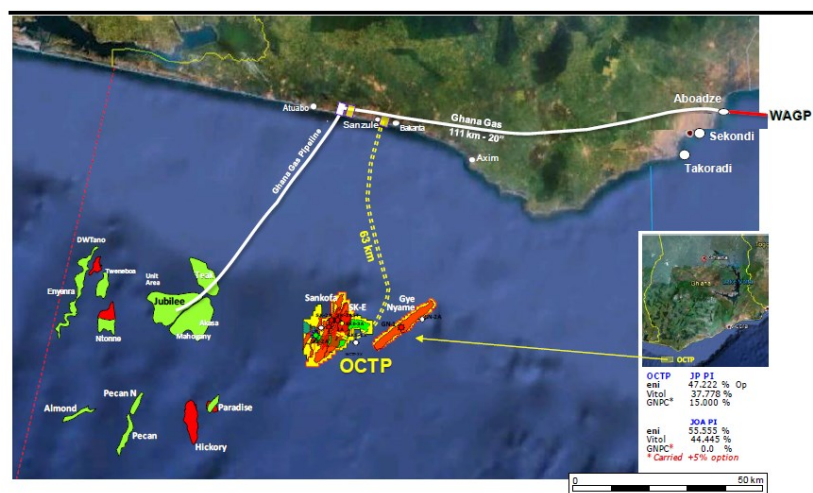


Figure 1: OCTP Block Area



The JV made three non-associated gas (NAG) discoveries: Sankofa Main Field in 2009, Gye Nyame Field in 2011, and Sankofa East Field in 2012. In addition, two oil discoveries were made: Sankofa East Field Cenomanian and Sankofa East Campanian, both in 2012 (“Oil Discoveries”). The estimated volumes in place associated with the discoveries are some 480 MMbbls of oil and 1.5 Tcf of non-associated gas.

The POD approved by the Petroleum Ministry on 30<sup>th</sup> December 2014 and its amendment approved on 11<sup>th</sup> May 2015 considered the integrated development of both oil and non-associated gas in 2 Phases:

- Phase 1: Oil Development Project. This phase consists of 14 subsea wells (8 oil producers, 3 water injectors and 3 associated gas injectors), subsea facilities, and a new conversion, double-hull floating production, storage and offloading (FPSO) unit that will be located about 60 km offshore, south of Sanzule;
- Phase 2: Non Associated Gas (NAG) Development Project. This phase consists of five (5) subsea wells, subsea facilities, gas treating facilities located on the FPSO unit, 63 km subsea gas pipeline, an Onshore Receiving Facility (ORF), and other associated onshore components. During operations, well fluids will be collected at a dedicated production manifold located on the FPSO where the multiphase fluids will be sent to a slug catcher for initial separation. The gas separated from the other fluids (mainly condensates and water) will then be routed to a dew point control system to achieve the required export specification ensuring no flow assurance problems. The treated gas will then be exported to shore via a new subsea pipeline. Onshore, the gas will be received at an ORF and then sent to the existing Ghana National Gas Company (GNGC) sales pipeline.

The Phase 1 Oil Development Project Environmental Impact Assessment (EIA) process was undertaken by ESL Consulting (ESL). The Submission of the Final EIS to the Ghana Environmental Protection Agency (Ghana EPA) was done in July, 2015 and the Environmental Permit for the Phase 1 Development released on July 9<sup>th</sup>, 2015.

The Phase 2 Gas Development Project Environmental Impact Assessment (EIA) process was undertaken by ERM. The Submission of the Final EIS to the Ghana Environmental Protection Agency (Ghana EPA) was done on July 8<sup>th</sup> 2015 and the Environmental Permit for the Phase 2 Development released on July 24<sup>th</sup> 2015.

This AER provides the description of the Eni Ghana’s environmental activities in 2016 for Phase 2 of the OCTP project.



## 7.1 ONSHORE RECEIVING FACILITY (ORF)

After the NAG treatment in the FPSO (i.e. dew point control) gas is then sent to the “ORF”. The ORF located in the Sanzule area of the Ellebelle district in the Western Region will be designed to compress a maximum of 405 MMSCFD, to handle the gas from the FPSO (190 MMSCFD plus 10% overdesign) in addition to gas potentially arriving into the export sealine from another pipeline in charge to potential other operators. The ORF will be designed to receive and compress also lean gas coming from the GNGC Atuabo gas plant, through the existing pipeline that will be commingled at Sanzule and sent again to the GNGC pipeline, allowing the necessary pressure to arrive at Aboadze Power Plant.

Eni Ghana’s activities in 2016 were covered by three (3) separate Environmental permits granted by the EPA. The Permits are:

### Existing Permits in 2016

- Environmental Protection Agency (EPA) Environmental Permit to undertake the proposed Construction, Installation and Commissioning of Offshore and Onshore (Gas Receiving Facility) infrastructure for the OCTP Block Phase-2 Development issued on July 24th, 2015 (Permit no. CE00217801152);
- EPA Environmental Permit to undertake drilling of thirteen (13) development wells in the OCTP Block issued on June 8th 2015 (Permit no. CE00217801143).

### New Permits acquired in 2016

- EPA Environmental Permit to undertake drilling of five (5) additional development wells in the OCTP Block issued on May 27th 2016 (Permit no. CE00217801158)

## 8 OPERATIONAL SUMMARY AND EVENTS

### 8.1 ORF EARLY-WORKS

On 24th July 2015, Eni Ghana obtained an Environmental Permit (CE00217801152) to undertake the proposed Construction, Installation and Commissioning of Offshore and Onshore (Gas Receiving Facility) infrastructure for the OCTP Block Phase-2 Development. The ORF early works contract was awarded to De Simone Limited (DSL) on 29th March 2016. Early works started in Q2 2016. Figure 2 below shows the current status of the ORF. Activities that were undertaken in 2016 are summarized below:

- Bush clearing;
- Hauling of stripped topsoil;
- Civil works for site office set-up;



- Hauling of laterite to for filling at the ORF, Permanent Accommodation camp, Helipad, Pilot Camp, Laydown area, Water Wells, main access road;
- Spreading and compacting of laterite at the ORF, Permanent Accommodation camp, Helipad, Pilot Camp, Main access road, Laydown area, Water Wells;
- Civil works at the Pilot camp. (Foundation for camp cabins, drains, fence post erection);
- Fencing of Permanent accommodation camp, Temporal Site Facility (TSF), Water Wells, Pilot Camp, Laydown Area and ORF;
- Construction of culverts;
- Laying of service lines from Water Wells to the TSF;
- Laying of Fiber Optic Cable by Vodafone to the site.



Figure 2: Overview of ORF

## 8.2 DEVELOPMENT DRILLING AND COMPLETIONS (NAG WELLS)

Eni Ghana obtained following Environmental Permits:

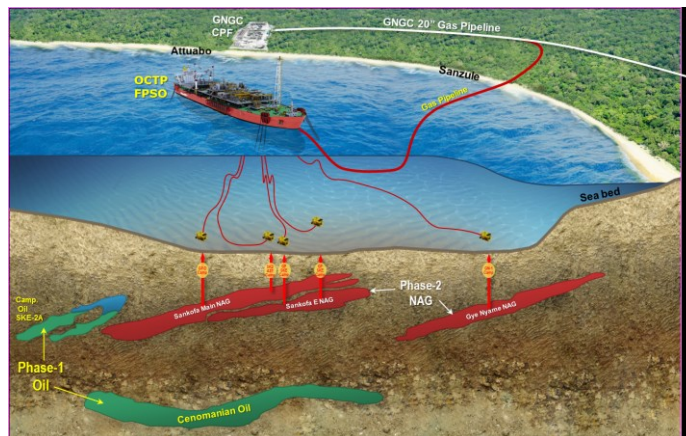
- EPA Permit No: CE00217801143 obtained on 8th June 2015 with validity until 15th December 2016;
- EPA Permit No: CE00217801152 obtained on 24th July 2015 with validity until 28th February 2017; and

- EPA Permit No: CE00217801158 obtained on 27th May 2016 with validity until April 15 2017) for the development drilling of eighteen (18) wells and completion activities on 4 wells as part of the development of the OCTP Phase 2 project.

Completion activities on remaining 14 wells were covered under Environmental Permit obtained for Phase 1 of the OCTP project (CE00217801146 obtained on 9th July 2015 with validity until 31st January 2017).

Development drilling which started in 2015 continued in 2016 and thirteen (13) wells were drilled. Three (3) of these wells were NAG wells (SNK E-D, SNK 2A ST and SNK E-C). The first NAG well (SNK-D) was drilled in 2015. Drilling activities for a fifth NAG well, Gye Nyame, is not expected until 2028 and thus was not permitted under the drilling permit issued by EPA.

The drillship used was the Maersk Voyager. Figure 3 illustrates the OCTP Phase 2 schematic layout.



**Figure 3: Schematic Layout-Phase 2**

Drilling of wells was conducted without any environment related incident. Terminal reports covering these operations have been submitted to the EPA.

Table 1 below indicates the status of the three (3) NAG wells drilled in 2016.

Well Name	Well Classification	Well Head Location		Drilling Status	Well Status
		Easting X	Northing Y		
SNK E-D	Gas Producer	548, 887.27 m X	491, 800.26 m Y	Drilled	Temporary Plugged & Abandoned



SNK- 2AST 2	Gas Producer	549, 396.50 m X	496, 615.96 m Y	Drilled	Temporary Plugged & Abandoned
SNK E-C	Gas Producer	551,565.83 m X	493,434.65 m Y	Drilled	Temporary Plugged & Abandoned

**Table 1: NAG Wells Drilled In 2016**

### 8.3 DRILLING EQUIPMENT

The drillship, Maersk Voyager which started operations in July 2015, continued drilling in 2016 and will remain there until at least the 4<sup>th</sup> quarter of 2018. It is a double derrick dynamically positioned drilling ship. Its position and location is guaranteed by thrusters and GPS systems. A picture and a summary of the specifications of the drillship are provided in Figure 3 below.



Name	Owner	Rig Type	Maximum Rated Water Depth (m)	Maximum Drilling Depth (m)
Maersk Voyager	Maersk	Drilling Ship	3, 657	12, 190

**Figure 4: Maersk Voyager**

## 9 ENVIRONMENTAL MANAGEMENT

### 9.1 ENVIRONMENTAL MANAGEMENT STRUCTURE

Eni Ghana HSE Department was in charge of Environmental Management in 2016. There were Field HSE superintendent and HSE field supervisors serving as the focal points for all



environmental related matters at the ORF, the Rig and the Logistics Base and other contractor operating sites. Since December 2010, Eni Ghana has been certified in accordance with the Environmental Management System (EMS) standard and regularly confirmed the compliance by third party certification body. ISO 14001, is an internationally agreed standard that sets out the requirements for an environmental management system and it helps organizations improve their environmental performance. This permitted Eni Ghana to implement proactive environmental objectives and manage the operating activities through the best practice tools.

Top Management provided leadership and direction to ensure the company was operating in an environmentally responsible manner. The HSE Integrated Management System (IMS) awareness was communicated effectively to the entire workforce and top management's commitment to achieving the objectives of the statement drove the implementation process. Eni Ghana employs a number of management tools to manage environmental impacts and risks associated with the Project. These include developing appropriate standards, procedures, plans and work instructions. Periodic auditing and inspections of procedures and operating sites are done for compliance, communicating responsibilities and monitoring. A number of management plans have been developed for specific environmental issues. Examples of these include the following:

- Environmental Management Plan;
- Onshore Pollution Prevention and Control Management Plan
- Hydrotest Water Disposal Management Plan
- Bushmeat Action Plan
- Traffic Management Plan
- Water Management Plan
- Environmental Monitoring Program
- Biodiversity Management Plan
- Avian Biodiversity Action Plan
- Sea Turtles Biodiversity Action Plan
- Flora Conservation Plan
- Reinstatement and Revegetation Standard
- No Net Loss Wetlands Strategy
- Prevention & Control of Alien Invasive Species
- Topsoil Management



- Waste Management Plan;
- Oil Spill Contingency Plan;

Among others, these plans generally deal with the below listed environmental issues:

- Water Pollution;
- Dust Emissions;
- Traffic issues;
- Biodiversity Management;
- Emissions to air and ambient air quality;
- Waste Management;
- Oil and chemical spills; and
- Noise emissions.

## **9.2 ENVIRONMENTAL MONITORING**

Eni Ghana's operations have environmental aspects that have associated environmental impacts which have to be adequately monitored to ensure local environmental quality and ecological conditions are preserved.

Monitoring programs are necessary to ensure discharges and emissions from operational activities meet regulatory limits for various environmental parameters and where there are exceedances, measures are put in place to achieve regulatory compliance limits.

Permit requirements as well as company's policies and procedures require the monitoring, reporting and management of environmental parameters.

In order to efficiently carry out this essential environmental monitoring function, Eni Ghana put in place measures to monitor impacts to the environment. In 2016, monitoring concentrated on:

- Water usage and discharged;
- Sewage Discharge
- Waste management
- Wildlife Resource Management
- Dust Emission control
- Topsoil Management
- Traffic Management

This was done in order to evaluate the effectiveness of operational controls and other





measures intended to mitigate potential impacts associated to the project as well as to ensure compliance with regulatory requirements.

### 9.2.1 Water Used and Discharged

Table 2 & 3 below illustrates quantities of water used and discharged respectively at the ORF.

Use	Water Quantity Used (l)
Water Wells for Domestic Use	211000
Water for Construction	464500
Municipal Supply for Domestic Use	188200
Surface Water for Domestic Use	714001.9
Dust Suppression	1590700

**Table 2: Water Used**

Type	Water Quantity Generated (l)
Grey Water	16000
Septic Waste	108750

**Table 3: Waste Water Treated**

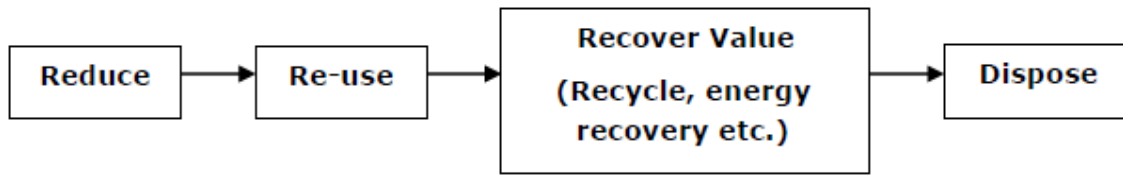
### 9.2.2 Waste Management

Waste generated during 2016 was managed as stated in the DSL Environmental Management Plan (Waste management). DSL who was in charge of operations at the ORF employed a practice of segregating waste into six (6) waste categories i.e. (hazardous, general, plastic, food, Wood waste and Metal Scrap).

Segregation is carried out at source. The Waste Management Contractor, Zoomlion Ghana Limited, authorized by EPA provided waste management services. Table 4 below shows the types and volumes of waste generated. The waste management hierarchy depicted in Figure 5 is imposed by Eni Ghana on the contractor and as such in 2016, 27.81 m<sup>3</sup> of plastic waste was recycled by the waste management contractor through Zoomlion Ghana Limited. To ensure effectiveness of the waste management hierarchy, appropriate identification and segregation of waste streams was adhered to. To facilitate this, DSL properly labels all its containers with following signs:

Hazardous, General, Plastic, Food, Metal and Wood Wastes.





**Figure 5: Waste Management Hierarchy**

**9.2.2.1 Waste Quantities Generated and Discharged**

At the ORF, the wastes produced are stored temporarily in suitable bins placed at vantage points. The Contractor HSE supervisor on-site prepares Waste Transfer Note (WTN) as stipulated in the Waste Management Plan, which is then verified by the Company HSE Supervisor. The WTN prepared has the following details:

- Details of the waste in transit (classification, description, characteristics, quantity);
- Name of Contractor responsible for the waste disposal;
- Name and signature of transporter/Disposal Contractor;
- Name and signature of Contractor HSE Representative;
- The quantity of waste transported (directly measured/estimated in volume (m3)).

The waste is hauled from site by the waste management contractor (Zoomlion Ghana Ltd.) for final disposal/treatment. Main treatment options used were:

- Recycling;
- Disposal To Landfill;
- Treatment.

A waste register (waste log) and copies of all WTNs that have been produced from the site are maintained by Contractor HSE personnel (Environmental Officer) and verified by on-site Company HSE.

Sewage and grey water from all facilities are collected once every week by the Waste Management Contractor and sent to a Sewage Treatment Facility within the Western Region for treatment. All sewage discharges are recorded in a Sewage record book.

Waste Type	Quantity Generated	Unit	Treatment Option	Contractor In Charge of Disposal
Food Waste	84.86	m <sup>3</sup>	Disposal to Landfill	Zoomlion



Hazardous Waste	13.34	m <sup>3</sup>	Recycling	Zoomlion
Plastics Waste	27.81	m <sup>3</sup>	Recycling	Zoomlion
General Waste	59.54	m <sup>3</sup>	Disposal to Landfill	Zoomlion
Scrap Metal	66,330	m <sup>3</sup>	Re-used	-
Septic Waste	108750	litres	Treatment	District Environmental Health Department
Grey Water	16000	litres	Treatment	District Environmental Health Department
Wood Waste	80	m <sup>3</sup>	Re-used	-

**Table 4: Waste Generated**

### 9.2.3 Emissions to air and ambient air quality

During the reporting year, Eni Ghana monitored hydrocarbons used for power generation at the ORF. Emissions generated were calculated using SHERPA, an excel based tool developed by the Eni Upstream for accounting air emissions. The SHERPA tool is to collect, manage and consolidate air emissions allowing accounting for GHG emissions, in addition to other air pollutants (SO<sub>x</sub>, NO<sub>x</sub>), on the basis of activity data (e.g., fuel consumptions, flaring/venting, production rates). Table 5 below indicates emissions generated at the ORF in 2016.

Site	Emission Source	Parameter	
		NO <sub>x</sub>	SO <sub>2</sub>
ORF	Generator	13 (tons)	7 (tons)

**Table 5: Air Emissions**

## 9.3 ENVIRONMENTAL INITIATIVES

- Minivans introduced for personnel transportation from Takoradi to Sanzule – This initiative served to minimize the number of vehicles on roads and thus direct reduction in fuel consumption and GHG emissions;
- Minimized plastic waste – Water cooler dispensers were introduced to replace plastic water bottles and the consequent large amounts of plastic waste generated;



- HSE observation and stop work cards system also introduced;
- Development of Environmental Management Plans;
- Training and Induction on environmental management plans – During 2016, a number of training/awareness sessions on the ESHIA Management Plans and their implementation have been held at the applicable Project facilities involving both Eni Ghana and Contractor staff. Similarly, induction material at all project sites were reviewed to provide an overview of the environmental requirements;
- Environmental Consultants were onboard and provided technical support in environment related studies;
- Tender process was initiated to select contractor to conduct onshore and offshore environmental monitoring activities; and
- Effective utilization of IVMS (In-Vehicle Monitoring System) – This allowed good control of vehicles by reducing unnecessary km driven thereby reducing the fuel consumption, dust generation and emissions.

#### **9.4 INSPECTIONS, AUDITS AND REGULATORY VISITS**

Eni Ghana carried out periodic audits and inspections. HSE inspections were conducted on a regular basis at the ORF site. These included both physical condition inspections as well as procedural audits. Eni Ghana assigned a dedicated HSE team at the ORF to ensure that Eni's expectations, compliance activities, and HSE procedures were adhered to onsite. Below are the tasks performed by the HSE team at the ORF:

- Ensure that Tool-Box Talk are properly carried out, recorded and filed by Contractor;
- Responsible for inducting all Company personnel, visitors and direct company sub-contractors on their first visit to the ORF as well as proper use, storage and record of PPE;
- Ensure that only qualified and competent people, as well as certified lifting equipment are used on-site;
- Review of Permit to Work (PTW) and Job safety Analysis (JSA)/Risk assessment (RA) prepared by the contractor before works are executed;
- Audit of the issued permits on-site to ensure enforcement/implementation of all outlined control measures at the operational areas;
- Area inspections conducted on a daily basis on all operational sites (Welding shop, Pilot camp, Water Well , Helipad, Main access road, ORF). Issues identified were



communicated to Contractor HSE for immediate rectification;

- Enforce and ensure the implementation of all outlined standards in the Contractor HSE Plan, Waste Management Plan, Emergency Response Plan (ERP), Traffic Management Plan, Environmental Management Plans;
- Prepare monthly HSE reports on operations at the ORF;
- Incidents investigation, reporting and implementation of corrective and preventive actions;
- Conduct Weekly HSE meetings with Contractor;
- Ensuring good housekeeping on-site;
- Supervision of all operations on-site to ensure high contractor HSE compliance, in terms of outlined internal HSE standards.

#### **9.4.1 Internal Audit**

Eni Ghana, confirming the compliance with EMS ISO 14001 requirements, performed internal audits on a scheduled basis including contractor's activities. Four (4) Internal Audits (internal to contractors) were conducted during 2016. One of those audits was carried out on De Simone Limited who is the contractor for the ORF Early Works.

#### **9.4.2 External Audits**

- From 18th – 23rd July, 2016, Eni/OPS/LOGIS Lifting Competence Center carried out a specific lifting assessment in Eni Ghana to verify the implementation level of the Lifting Management System (LMS). The team visited Eni Ghana – Accra Headquarter, Maersk Voyager Drilling Unit (offshore), Takoradi Logistic Base and Port yard and Sanzule Onshore Receiving Facility. The main operational improvement areas recommended were the operational planning (non-routine lift plans, PtW, Tool Box Talk system) and execution (sensitization campaign about technical aspects of lifting operations and safe behaviors). The recommendations of this assessment have been satisfactorily closed out;
- RINA re-certification audit for ISO 14001 & OHSAS 18001 (with inclusion of ORF) was carried out from 21st to 25th November with no non-conformities raised. Recommendations were however suggested by the auditors to Eni Ghana.

#### **9.4.3 ISO 14001**

Since December 2010, Eni Ghana has been certified in accordance with the Environmental Management System (EMS) standard, ISO 14001, and in 2016, a major task was to ensure Eni Ghana's EMS certification was maintained following the ISO 14001 recertification audit



in November 2016. To this effect, an audit was conducted at the Onshore Receiving Facility, Sanzule. The main activities lined up and implemented in order to achieve the milestone included:

- ISO 14001 EMS system maintenance;
- Implementation of Environmental Management Plans;
- Review and upgrade of the ISO 14001 Legal register.

Certification was validated for the ORF and all other operational sites.

#### **9.4.4 EPA Visit – ORF**

On the 29th of November, 2016, EPA accompanied with their guests from Uganda and Norway, made a site visit to the ORF. The visit was not an inspection/monitoring visit rather it was part of their training objective.

## **10 ENVIRONMENTAL INCIDENTS**

Environmental incidents which include contained spills are logged on the INDACO incidents reporting tool. A summary of environmental incidents recorded for 2016 are presented below:

<b>1) Incident Type:</b>	<b>Contained Hydraulic Oil Spill</b>
Date:	11 <sup>th</sup> June, 2016
Company:	DSL
Location:	ORF, Sanzule
Description of Event:	Around 2:00 pm, a dumper truck (DT73) hauling topsoil from the flanges of the road leading to the Temporal Site Facility, just after parking to receive the load, realized the hydraulic oil was gushing out of the pressurized pipe. The Environmental department was immediately informed to assist in containing the spill. About 15 liters of hydraulic oil leaked onto the ground.
Corrective Action Report:	Damaged hydraulic seal replaced. Supervisor present at all operational sites. Daily inspection of pre-start checklist on all equipment.



**2) Incident Type:****ORF - Hydraulic Oil Spill**

Date:	26 <sup>th</sup> June, 2016
Company:	DSL
Location:	ORF, Sanzule
Description of Event:	Around 16:56, the flagmen and other personnel on the stretch realized dumper truck (DT47) hauling topsoil from the Helipad area had hydraulic oil gushing out of the steering cylinder. It took shouts from the flagmen to stop the dumper driver In order to avert any further spill. About 1 litre of hydraulic spill was realized. Same dumper truck had an unusual high sound from the exhaust.
CAR:	The damaged hydraulic seal was replaced. The contaminated soil was properly stored for onward transport by the waste management contractor. Environmental department tasked to prevent further spread of the spilled hydraulic oil.

**3) Incident Type:****Diesel Spillage Volvo Dumper Truck**

Date:	23 <sup>rd</sup> June, 2016
Company:	DSL
Location:	ORF, Sanzule
Description of Event:	Around 11:15 am, a Volvo Dumper Truck (DT62) was stopped during operations as its diesel kept spilling while moving. This was as a result of using black polythene to cover the diesel tank instead of an appropriate tank cover. Diesel had spilled all over the front bumper of the truck.
CAR:	A new diesel tank cover has been installed.

**4) Incident Type:****ORF - Hydraulic Oil Spill from Dumper Truck**

Date:	25 <sup>th</sup> June, 2016
Company:	DSL
Location:	ORF, Sanzule
Description of Event:	Around 14:25, hydraulic oil was leaking from one of the cylinders of dumper truck (DT47) at the ORF while hauling laterite. This was barely a



day after the mechanical team had replaced the damaged hydraulic seal in the same hydraulic steering cylinder on the truck. Almost a litre of hydraulic oil was spilled. The truck had to be grounded for the mechanical team to attend to it.

CAR:

The hydraulic cylinder was replaced. The contaminated soil was properly stored for onward transport by the waste management contractor. Due to the repeated incident, the truck was to undergo thorough mechanical check. Environmental department tasked to prevent further spread of the spilled hydraulic oil

### 5) Incident Type:

#### ORF - Diesel Spill

Date:

11<sup>th</sup> August, 2016

Company:

DSL

Location:

ORF, Sanzule

Description of Event:

Around 930am, there was about 3L of diesel spill on a concrete pad during fuelling of the welding generator set. Wrong reading of the fuel gauge on the generator set and lack of concentration by the welder assisting in pumping caused the spill. In the process some amount of diesel spilled on his gloves and the right leg of his coverall

CAR:

Stop work was issued to the welders. Genset was switched off. Sand was spread over the spilled diesel on the cement floor (spill was contained). Contaminated Hands was rinsed with water and appropriate detergent. Worker was sent to change his coverall Training and awareness campaign to be organized by environmental department on how to avoid, contain and how to manage spills. Contaminated soil cleaned up. The MSDS of all chemicals to be filed and stored at vantage sites and made readily available for easy reference in the event of absorption (skin





contact) and/or inhalation of hazardous chemicals.

## 6) Incident Type:

### ORF - Hydraulic Oil Spill

Date:	2 <sup>nd</sup> November, 2016
Company:	DSL
Location:	ORF, Sanzule
Description of Event:	Around 14:00, a tipper truck (GT8298W) in an attempt to tip loaded laterite from the new borrow pit at Kambgunli, had hydraulic oil leaking from a torn hydraulic hose. The driver was immediately alerted by the spotter to stop and switch off his engine to prevent further spill. About 3 liters of hydraulic oil spilled.
CAR:	Regular maintenance checks must be carried out on all equipment on site, most especially the old ones. The mechanics were immediately called in to replace the worn out hydraulic hose. DSL environmental officer ensured the spill area was contained with a bund of laterite. Contaminated soil was scooped/cleaned up for disposal.

All raised corrective actions have been closed formally.

## 11 SAFETY EXCLUSION ZONE

Consistent with industry practice and acquired Environmental Permits for the drilling completion operations, a 500m radius safety exclusion zone was established around the rig during the drilling activity. However, the safety exclusion zone was not kept clear of fishermen. There were several instances where fishing boats using fishing lines were spotted at both starboard and port side. On the average, there were about a minimum of 10 boats/day and a maximum of 15 boats/day incursions. Recording of boats were done in the morning and evening. Eni Ghana with the support of the chase vessel, *Armada Tugas 4*, keep these Fisherman boats out of the safety exclusion zone. There have been frequent correspondence with the Navy and authorities on the management of these incursions. Discussions are ongoing on attempts to draw up a Memorandum of Understanding (MoU) with the Ghana Navy.



## 12 EMERGENCY PREPAREDNESS

In 2016, Eni Ghana put in place an ERP to:

- Minimise negative consequences to human life, environment, Eni Ghana assets and business in case of an emergency situation, and eni reputation by an effective and efficient response;
- Ensure the availability of adequate information on emergency situations through a good communication system and at all levels;
- Ensure efficient management of the emergency through all available and dedicated resources.

The ERP covers all stages and phases of the emergency response, from initiation until the emergency is over and the normalization phase has started.

The operations Oil Spill Contingency Plan (with a section on the Shoreline Contingency Plan) was also in place to offer guidance on the necessary actions to prevent and/or minimise any accidental discharge of oil and to mitigate any negative effects. Eni Ghana also utilized the services of Oil Spill Response Limited (OSRL) to carry out training exercises and inspections to further improve oil spill awareness and capability for both in house personnel, third party contractors and community members.

Dedicated Oil Spill Response shoreline package training sessions were organized starting from 2nd of November to 4th of November 2016. The trainings were provided to local community representatives from the following regions: Bakanta, Anwonakrom, Krisan and Eikwe. The local community representatives were divided into three groups and three dedicated shoreline package trainings sessions were organized. In each training session the number of participants was around 23 person including 5 Tullow Ghana Limited participants.

The training were organized in cooperation with Tullow Ghana Limited (TGL). TGL provided experienced personnel and their own training equipment – shoreline package, towing vehicles with trained drivers and ATV vehicle with trained drivers which was used for training purposes. As a training facility the Casa Blanca Resort with access to the beach lagoon was used again because established by TGL relationships with the training facility. Eni Ghana provided the OSRL trainers and hospitality for participants and trainers.

## 13 SUSTAINABILITY & COMMUNITY ENGAGEMENT ACTIVITIES

Eni Ghana's social performance is made up of three component parts; community



stakeholder engagement, social impact management and Community social investment. In 2016, Eni Ghana was committed to operating and acting in accordance with laws, rules of fair competition, honesty, integrity, transparency and good faith, with due respect to the legitimate interests of its employees, shareholders, commercial and financial partners, industry associations, communities and legitimate institutions, governments and their agencies. A fundamental value exhibited in 2016 was respecting the local communities and people impacted by its business. Proper management of the social impacts of its operations was critical to the growth and sustainability of the business. Managing impacts consistently helped to ensure risks were mitigated and also ensured that projects run on time and on budget. Positive reputation was built to strengthen access to growth opportunities. Broadly, milestones achieved in 2016 are listed below in the sections.

### **13.1 COMMUNITY ENGAGEMENTS**

A series of grass-root interactions with communities' key influencer groups, individuals and institutions in Accra and Takoradi were made providing the possibility for stakeholders to become acquainted with the project, to understand its potential impacts and proposed mitigation and management measures and finally for the affected community and interested public, to raise concerns and issues.

Community Investment (CI) Strategy workshop was held in Accra from the 1<sup>st</sup> - 2<sup>nd</sup> March 2016 to define activities for the preparation of the CI Strategy document. Below are CI Strategy Workshop 1-2 March Communique and the Ghana OCTP CI Strategy Working Document.

Three public hearings attended by the Western Regional House of Chiefs, Municipal Chief Executives (MCEs), District Chief Executives (DCEs), Assembly Members, the Media and the General Public were held to:

- Introduce the Company and begin the foundations of a friendly, mutually understanding relationship between Eni Ghana and all the fishing communities along the coast who could in one way or another affect or be affected by our activities;
- Ensure that the fishing communities understand what the drilling operations are about, the benefits of the operations and the fishermen's limitations. The result would be that both the fishermen and Eni Ghana could occupy the waters for that frame of time with no or very minimal interruptions to drilling operations;
- Form a good relationship with the communities, understand their background,



needs and concerns and where possible or feasible, work together to improve them.

### **13.2 EARLY WORKS COMMUNITY ENGAGEMENTS**

As part of OCTP Onshore Receiving Facility (ORF), Early Works full engagement was held in all eni Ghana communities namely: Bakanta, Krisan, Eikwe, Anwolakrom and Sanzule. The engagement began on the 16<sup>th</sup> of March and concluded on the 19<sup>th</sup> of March, 2016. The engagement process earmarked the full mutual communication Company-Community on ORF development execution.

The goals of the engagement were:

- To create awareness to ensure people have knowledge of the Project and its wider ramifications and development significance
- To create understanding for locals to comprehend the nature and intent of the Project and what the Project means for the people
- To create the most positive perception of the Project for the people
- To build confidence: to demonstrate eni Ghana's commitment to the wider development goals and aims of the people
- To share Project execution activities and on-going and socio-economic territorial development under planning and start-up stages
- To ensure that community and people working for eni Ghana trust each other, and work together to develop the areas hosting the project to benefit the present and future generations (Mutual & Broad Community-Company Support)

### **13.3 SUSTAINABILITY AWARENESS FOR CONSTRUCTION TEAMS**

The Offshore Cape Three Point (OCTP) Onshore Receiving Facility (ORF) Construction Teams Sustainability Awareness was held in Sanzule on May 14, 2016 as part of eni Ghana stakeholder management framework and responsiveness and respect for local people.

The orientation process aimed at further expanding multi-stakeholder communication Company – Community – Contractors on ORF development execution within eni Sustainability Guidelines.

The under listed were the orientation goals that eni Ghana pursued during the process:

- Awareness & Understanding: to ensure that Construction Teams - Contractors – and Construction Workers and Security Personnel from Communities have knowledge and comprehend eni Code of Ethics and Sustainability, ISO 26000, IFC Performance Standards objectives, eni Ghana Grievance Mechanism, Environmental & Social Sustainability Plans and execution implications for OCT ORF development.



- Outreach & Opportunities: to engage primary stakeholders, fostering dialogue on sustainability and corporate responsibility, demonstrating our commitments, thus expanding our operational standards, sphere of influence, sustainable development possibilities and business continuity and growth for the people.
- Multi-stakeholder Coalition: to ensure that Company-Community-Contractors people operate within eni Social Responsibility & Sustainability framework for the benefits of the areas hosting OCTP ORF implementation.

### **13.4 LIVELIHOOD RESTORATION PLAN**

The livelihood restoration plan is a plan developed to restore the people of Sanzule whose crops were affected by the OCTP ORF construction. The LRP options discussed included the following:

- Continuous Cropping: This option is to allow people who will want to continue with their farming activities to be supported with the necessary inputs and machineries to farm. It was explained that this option was meant for people who still had access to lands outside the project's area.
- Small Livestock Keeping: This option is to give opportunity to people who have access to a small area of land to be supported with input and also training on how to keep or rear the animals.
- Aquaculture: This option is also a land based option where people will be supported with inputs and training. This option does not require large amounts of land.
- Value Adding/Trading: this non land based option gives the prospect to be trained on how to process raw materials or primary goods into finished goods for sale. This will help reduce the rate at which produce go bad when in abundance.
- Vocational Training: This option gives the opportunity for people to learn a skill of their choice to improve their livelihood, for e.g. catering, dress making, soap making etc.

### **13.5 GRIEVANCES MECHANISM**

Eni Ghana has in place a grievance mechanism. Project-related grievances (written and verbal) received from communities and stakeholders affected at by the project were evaluated and addressed. The CLOs received and examined complains and provided rapid responses to the complainant. In instances where the CLOs could not resolve grievances, the grievances are escalated to the Local Content & Sustainability Manager to further handle the issue. The Grievance Committee is brought into the grievance management only when grievances are escalated at the Managerial level. Figure 5 shows the Grievance mechanism employed in Eni Ghana.





Figure 6: Grievance Mechanism

In 2016, about twenty-two (22) grievances regarding the Phase 2 project were received from complainants. All complaints were processed immediately they were received. As at December 2016, all complaints had been closed. All the grievances were closed out at CLO and or management level. No grievance was escalated to the Grievance Management Committee.

## 14 CONCLUSION

In 2016, Eni Ghana worked to:

- Minimize environmental impacts from their operations onshore,
- Maximize safety for its personnel, and
- Comply with EPA permit conditions



- Implementation of Environment & Social Action Plans (ESAP) and compliance with Project Environmental and Social (E&S) commitments.

This achievement is reflected by the fact that several environmental management plans were developed and implemented and only minor environmental incidents were recorded despite the high level of operational activity the company was engaged in. Thus the company's effort in achieving a high HSE performance on a continual basis has yielded positive results.

Drilling and lower completion operations on the NAG wells as well as other wells project were completed in 2016 to ensure the timely delivery of the project. Upper completions will continue in 2017.

Eni Ghana worked with a number of regulators and parastatal organisations to further improve capacity in relation to the oil industry.

Planning for oil spills, procurement of equipment and training of personnel and the community were undertaken in 2016. Extensive oil spill training will be conducted in April & May 2017.

A wide range of environmental monitoring activity will be conducted throughout 2017.

Several construction activities will commence in 2017. Among them are construction of the ORF, accommodation camps, helipad area. Construction works on the Gas Export Sealine (GES) will be started.

