



**Environmental
Protection
Agency**

GANGES STREET, SOPHIA
GEORGETOWN, GUYANA
Tel.: (592) 225-2062 / 1218 /
0506 / 6917
Fax: (592) 225-5481
Email: epa@epaguyana.org
Website:
<http://www.epaguyana.org>

Environmental Permit

Issued under the Environmental Protection Act, Cap. 20:05, Laws of Guyana, the Environmental Protection (Amendment) Act, 2005, and the Environmental Protection (Authorisations) Regulations, 2000.

Reference No.:	20191001-EEPGL - 24
Fee:	Extra Large (C1) – USD 3,100 per year
Fees Paid:	USD 15,500 – Five (5) years (August 2023 to July 2028)

Addressee(s): Mr. Alistair Routledge
President
Esso Exploration and Production Guyana Ltd.
86 Duke Street
Kingston
Georgetown, Guyana.

Activity: Offshore Petroleum Exploratory Drilling within the Stabroek Block – Lancetfish-2 Well.

Esso Exploration and Production Guyana Limited (EEPGL), hereinafter referred to as the “Permit Holder”, is hereby authorised by the Environmental Protection Agency (EPA) in accordance with the Environmental Protection Act, Cap. 20:05, Laws of Guyana (hereinafter referred to as “the Environmental Protection Act”), the Environmental Protection (Amendment) Act, 2005, the Environmental Protection (Authorisations) Regulations, 2000, and the Maritime Zones Act, Cap. 63:01 (hereinafter referred to as the “Maritime Zones Act”) to undertake Offshore Petroleum Exploratory Drilling of the Lancetfish-2 Well, the twenty fourth Well under the 25 Multi-Well Programme, within the Stabroek PPL, hereinafter referred to as the “Project”, in the manner indicated in the Application submitted on October 1, 2019, the approved Revised Environmental Assessment Management Plan dated October, 2020, the Oil Spill Response Plan, dated September, 2020, the Intent to Drill Meeting (June 7, 2023), the Prognosis for Lancetfish-2 Well, and the Wildlife Response Plan and subject to the terms and conditions set forth herein and the provisions of the Environmental Protection Act, the Maritime Zones Act and any applicable regulations made thereunder taking into account the international rules and standards, international treaties and conventions to which Guyana is a party, and any forthcoming regulations, best practices, approvals, directives, guidelines and standards made under the Environmental Protection Act.
The Permit Holder shall comply with the following Terms and Conditions.

Environmental Permit Ref. No.: 20191001-EEPGL-24

Issued under the Environmental Protection Act, Cap. 20:05, Laws of Guyana, the Environmental Protection (Amendment) Act, 2005, and the Environmental Protection (Authorisations) Regulations, 2000.

1.0 GENERAL

- 1.1 The Permit Holder shall notify the Agency in writing to obtain its approval for **ANY** proposed changes to the operation at least **fourteen (14) days** prior to making the change. The notification shall contain a description of the proposed change in operation. It is not necessary to make such a notification if an application to vary this Permit has been made and the application contains a description of the proposed change. In this condition, 'change in operation' means a change in the nature or functioning of the operation, or an extension, or any additional installation, which may have consequences for the environment. Changes in operation may include but are not limited to the following:
- a. change in drill ship, or method(s) of drilling and well testing;
 - b. installation of new and/or changes (excluding routine maintenance) to equipment, machine, apparatus, mechanism, system or technology serving the facility or operation;
 - c. side-tracking;
 - d. any change of technology used or installed at the facility from which effluents may be discharged or any changes in the nature, composition, concentration or quantity of the discharge; or
 - e. any other variance prescribed by Regulation 20(3) of the Environmental Protection (Authorisations) Regulations.
- 1.2 Any approval issued in accordance with **Condition 1.1** issued may be subject to such further terms and conditions as the Agency deems appropriate, and such further terms and conditions shall be considered as forming part of the present Permits so that any breach or contravention thereof, shall be considered a breach or contravention of the Permit.
- 1.3 The Permit Holder comply with the approved Revised Environmental Assessment and Management Plan (EAMP) dated October, 2020, inclusive of all protocols, plans and mitigation measures stipulated therein, all of which constitute terms and conditions of this Permit. Failure to comply with the approved Revised EAMP (October, 2020) constitutes a breach of this Permit, **EXCEPT** where an alternative course of action is proven more appropriate or applicable, to the satisfaction of the Agency, in a given circumstance.
- a. Pursuant to **Condition 1.2** above, the application of an alternative course of action which is proven more appropriate in a given circumstance shall be communicated to the Agency **within twenty-four (24) hours** of the determination of the alternative course.
- 1.4 The Permit Holder shall comply with the provisions of the Environmental Protection Act, Cap. 20:05, Petroleum Exploration and Production Act Cal 65:04, 1986, the Petroleum Exploration and Production (Amendment) Act, 1992, the Pesticides and Toxic Chemicals Act Cap 68:09 the Pesticides and Toxic Chemicals

Environmental Permit Ref. No.: 20191001-EEPGL-24

Issued under the Environmental Protection Act, Cap. 20:05, Laws of Guyana, the Environmental Protection (Amendment) Act, 2005, and the Environmental Protection (Authorisations) Regulations, 2000.

Regulations, No. 8 of 2004, and the Pesticides and Toxic Chemicals (Amendment) Regulations, No.8 of 2007.

- 1.5 The Permit Holder shall comply with the following legislation and regulatory instruments as specified under “**3.0 Administrative Framework**” in the approved Revised Environmental Assessment and Management Plan (EAMP), dated October, 2020, under the following headings:
 - a. National Legal Framework;
 - b. National Policy Framework; and
 - c. All applicable policies, laws and regulations of Guyana.
- 1.6 The Permit Holder shall provide adequate fire protection measures, in accordance with the International Guidelines in the approved Revised EAMP (October, 2020), where applicable, and marine fire protection systems on the Drill Ship and all other supporting vessels.
- 1.7 The Permit Holder shall conduct training for all employees on the conditions of this Environmental Permit and on good environmental management practices. Document such training and submit to the Agency, in the End of Well Report, a report on the content, and duration of training.
- 1.8 The Permit Holder shall conduct weekly meetings on Environmental Health and Safety with staff involved in the operation.
- 1.9 The Permit Holder shall provide specialised training, equipment, and standard operating procedures for employees in all aspects of the operation, including but not limited to well control and, the drilling process (solids control and fluid recovery system, drilling fluids and handling system, etc.). Standard operating procedures shall be complied with to ensure compliance with this Permit and shall be made available to the Agency upon request.
- 1.10 The terms and conditions of this Permit are binding upon the Permit Holder and the Permit Holder is responsible for any violations hereunder, including violations by its agent(s) or contractors (and their sub-contractors). The Permit Holder shall make such agent(s) or contractors (and their sub-contractors) aware of the Conditions of this Permit.

2.0 NOISE AND AIR QUALITY MANAGEMENT

- 2.1 The Permit Holder shall comply with the provisions of the **Environmental Protection (Noise Management) Regulations, 2000** and the **Environmental Protection (Air Quality) Regulations, 2000**.

Environmental Permit Ref. No.: 20191001-EEPGL-24

Issued under the Environmental Protection Act, Cap. 20:05, Laws of Guyana, the Environmental Protection (Amendment) Act, 2005, and the Environmental Protection (Authorisations) Regulations, 2000.

- 2.2 The Permit Holder shall ensure that all sound-making devices or equipment are fitted with silencers or mufflers, and/or are enclosed, to reduce noise emanating from both onshore and offshore operations.
- 2.3 The Permit Holder shall operate and maintain all mechanical equipment in accordance with their respective manufacturer's specifications. Mechanical equipment, vehicles, vessels and helicopters, utilised during exploration works, must be maintained and operated at optimal levels to minimise atmospheric emissions.
- 2.4 The Permit Holder shall combust waste oil at an optimum temperature to minimise atmospheric emissions keeping combustion temperatures between 850°C and 950°C.
- 2.5 The Permit Holder shall monitor exhausts daily for smoke and particulates. In instances of visible smoke, the Unit must be shut down, and the cause(s) investigated and resolved. Details of any such investigations must be reported under **Condition 11.7**.
- 2.6 The Permit Holder shall operate the incinerator in accordance with the best available control technology (BACT) and the manufacturers' operation manual.
- 2.7 The Permit Holder shall ensure that only trained personnel who are able to implement the guidance provided in the Manufacturer's Operating Manual, operate the incinerator.
- 2.8 The Permit Holder shall prioritise the use of low sulphur diesel or ultra-low sulphur diesel.
- 2.9 In accordance with the International Convention for the Prevention of Pollution from Ships (MARPOL) Annex VI, ozone-depleting substances (ODS) shall not be discharged during permitted activities on the vessel.
- 2.10 The Permit Holder shall provide gas detectors and gas alarms (visual and audible) which are capable of detecting gas at all times.
- 2.11 The Permit Holder shall submit in the End of Well Report (using the Agency's Form for Reporting and Record Keeping for Air Emissions), an air quality monitoring report detailing emissions data on air contaminants generated from the Project. Contaminants reported on shall include, but not be limited to, particulate matter, sulphur oxides, volatile organic compounds, ozone depleting substances, carbon monoxide, carbon dioxide, carbon dioxide equivalent, nitrogen oxides, methane, and fugitive emissions. The total volume of used oil incinerated shall also be included in the report.

Well Test

- 2.12 The Permit Holder shall keep the well test and flaring duration to the minimum practical time, in accordance with a pre-approved schedule between the Agency and the Permit Holder. Any deviations from or variations to the pre-approved schedule shall be approved by the Agency.
- 2.13 The Permit Holder shall notify the Agency at least **forty-eight (48) hours** prior to the start of any flaring or venting, and provide ample notice to other applicable regulatory Agencies. Such notification shall include data regarding:
- a. location where flaring and venting will occur;
 - b. period during which the activity will be carried out;
 - c. the expected volume of hydrocarbons to be flared, the expected quantity of specific pollutants that may be emitted (including carbon dioxide or carbon dioxide equivalent), and the expected amount of energy that may be released. Note that fuel gas flared or vented, must be reported as fuel gas and not flare gas; and
 - d. any mitigation measures to be applied to reduce gas emissions and prevent/reduce harm to seabirds.
- 2.14 Prior to a well test, the Permit Holder shall:
- a. ensure that flare equipment and all combustion equipment are designed and built to API Standards and Recommended Practices;
 - b. ensure that flare equipment is inspected, correctly installed, function tested, certified for use under operation conditions, and maintained in accordance with manufacturers' specifications, prior to oil production and throughout operations;
 - c. calibrate and maintain a flow metering system to measure the volume of fluid leaving the well to the flare stack, in accordance with the manufacturers' recommendations of which calibration certificate must be submitted to the Agency upon completion of calibration;
 - d. ensure that the flaring stack is installed a safe distance from storage tanks and accommodation units;
 - e. minimize the risk of pilot flare blowout by ensuring sufficient exit velocity and providing wind guards;
 - f. determine the minimum exit velocity required to avoid pilot flare blowout and submit information to the Agency prior to the commencement of a well test;
 - g. Operate the facility in a manner to keep overpressure events as low as practically possible and install high-integrity instruments pressure protection systems, as necessary, to reduce overpressure events and avoid or reduce flaring situations; and

Environmental Permit Ref. No.: 20191001-EEPGL-24

Issued under the Environmental Protection Act, Cap. 20:05, Laws of Guyana, the Environmental Protection (Amendment) Act, 2005, and the Environmental Protection (Authorisations) Regulations, 2000.

- h. implement burner maintenance and replacement programs in accordance with manufacturer's recommendations to ensure continuous maximum flare efficiency.

2.15 During a well test, the Permit Holder shall:

- a. employ a metering system with an accuracy of **plus or minus five (5) percent** to determine the quantity of gas to the flare system;
- b. ensure that the flaring systems are being operated within manufacturers' recommended specifications;
- c. utilise efficient flare tips;
- d. optimize the size and number of burning nozzles;
- e. flare in a manner which controls odour and smoke emissions, where practicable;
- f. control and optimize flare operations to achieve maximum combustion efficiency; and
- g. minimize liquid carryover and entrainment in the gas flare stream with a suitable liquid separation system designed in accordance with good international industry practice

2.16 After a well test, the Permit Holder shall:

- a. remove any liquids from the separator after flaring is complete;
- b. record and report in the End of Well Report the volumes of hydrocarbons flared. The estimated quantity of specific pollutants emitted from flaring including but not limited to carbon dioxide (CO₂), carbon dioxide equivalent (CO₂-e), nitrogen oxides (NO_x), sulphur oxides (SO_x), carbon monoxide (CO), particulate matter, hydrogen sulphide (H₂S), volatile organic compounds (VOCs). The report must include methodology used to determine the concentration of each pollutant;
- c. maintain a consolidated record of all flaring events, regardless of size and duration, including begin times, end times and volumes, meter calibration and maintenance records throughout the duration of the Permit;

2.17 The Permit Holder shall submit, within **three (3) weeks** of issuance of this Permit, methods and measures identified to reduce sources gas emission.

3.0 VERTICAL SEISMIC PROFILING (VSP)

- 3.1 The Permit Holder shall notify the Agency of the intent to commence Vertical Seismic Profiling (VSP) of the **Lancetfish-2** Well.
- 3.2 The Permit Holder shall adhere to the Joint Nature Conservation Committee (JNCC) Guidelines (2017) during the conduct of VSP.

Environmental Permit Ref. No.: 20191001-EEPGL-24

Issued under the Environmental Protection Act, Cap. 20:05, Laws of Guyana, the Environmental Protection (Amendment) Act, 2005, and the Environmental Protection (Authorisations) Regulations, 2000.

- 3.3 In accordance with the JNCC Guidelines, trained Marine Mammal Observers (MMOs) shall be on board the vessel during the conduct of VSP. At a minimum, one trained MMO and one non-dedicated MMO must be employed.
- 3.4 In accordance with the JNCC Guidelines, verify by Best Available Technology, including telescopic observations, that the mitigation zone (500 metres) is clear of marine mammals and marine turtles before commencing operations. All verifications must be recorded and submitted in the End of Well Report.
- 3.5 The Permit Holder shall record all marine mammals, protected species and marine turtle observations, and mitigation actions taken within the 500 metres mitigation zone. Records shall be submitted in the End of Well Report highlighting the date, location and time of the observations and contain the following information:
- a. project commencement;
 - b. name, qualification and experience of the MMOs;
 - c. observations affected/hampered by poor visibility or high winds;
 - d. any start-up delays, power downs or stop work procedures due to marine mammal, protected species and marine turtle sightings;
 - e. marine mammal, protected species and marine turtle sightings including species and distance from vessel; and
 - f. project completion.

4.0 DRILL SHIP/EXPLORATION VESSEL, AND PROJECT VESSELS

- 4.1 The Permit Holder shall comply with the International Maritime Organisation's regulations and/or standards for lighting on the vessel.
- 4.2 The Permit Holder shall comply with the International Convention for the Control and Management of Ship's Ballast Water and Sediments (2004).
- 4.3 In accordance with MARPOL 73/78 requirements, the Permit Holder shall maintain an Oil Record Book to document the manner in which sludge, oil, bilge water, waste-oil, etc., are disposed.
- 4.4 In accordance with MARPOL 73/78 requirements, the Permit Holder shall adhere to the vessel's Garbage Management Plan and maintain a Garbage Record Book.
- 4.5 Equipment on board (engines, compressors, generators, sewage treatment plant, oil-water separators, etc.) shall be checked and maintained in accordance with manufacturer's guidelines to maximise efficiency and minimise malfunctions.

5.0 WATER QUALITY MANAGEMENT

- 5.1 The Permit Holder shall comply with the provisions of the **Environmental Protection (Water Quality) Regulations, 2000**.
- 5.2 The Permit Holder shall ensure that the discharge of any pollutant/contaminant in territorial waters is **strictly prohibited** (i.e., twelve (12) nautical miles from the baseline). At no time, in territorial waters, should drilling fluids and cuttings be discharged on the sea bed. Instead, they are to be collected, properly transported, stored and recycled or treated, prior to disposal onshore at a facility approved by the Agency.
- 5.3 The Permit Holder shall follow the Water Quality Monitoring Protocol as outlined in the approved Revised EAMP dated October, 2020. Results of water quality monitoring must be reported monthly and at the closure of every activity (in both a printed copy and in an editable Standard Reporting Matrix).
- 5.4 The Permit Holder shall adhere to all operational controls regarding material storage, wash-downs and drainage systems.
- 5.5 The Permit Holder shall notify the Agency at least **seven (7) calendar days** prior to making any changes in the type of drilling fluid to be used, and outline the disposal/recycle/treatment methods to be applied. Notice given after the 7 days period required herein shall only be accepted where the Agency is satisfied that the notification period was not feasible due to flow assurance or safety risks.
- 5.6 The Permit Holder shall ensure that the discharge point of the treated drill cuttings, water-based mud, excess of cement slurry and bentonite is at least **ten (10) metres** below the water surface.
- 5.7 The Permit Holder shall utilise solids control and cuttings dryer systems to treat cuttings to achieve an end of well maximum weighted mass ratio averaged over all well sections drilled using non-aqueous fluids not exceeding 6.9% wet weight base fluid retention on cuttings.
- 5.8 The Permit Holder shall determine the end of well maximum weighted mass ratio averaged over all well section drilled using non-aqueous fluids using an internationally recognised and Agency approved method.
- 5.9 The Permit Holder shall utilise **only** low-toxicity International Oil and Gas Producers (IOGP) Group 3 base fluid (polycyclic aromatic hydrocarbons <0.001% by weight and total aromatic content <0.5% by weight) for well sections requiring non-aqueous drill fluid (NADF).



Environmental Permit Ref. No.: 20191001-EEPGL-24

Issued under the Environmental Protection Act, Cap. 20:05, Laws of Guyana, the Environmental Protection (Amendment) Act, 2005, and the Environmental Protection (Authorisations) Regulations, 2000.

- 5.10 The Permit Holder shall prohibit the discharge of cuttings generated using drilling fluids, which contain conventional mineral oil (IOGP Group 1), except when the mineral oil is used as a carrier fluid (transporter fluid), lubricity additive, or pill.
- 5.11 The Permit Holder shall report the type, composition, composition concentrations, and volume of drilling fluids and drill cuttings discharged. The times, dates and duration of discharges shall also be reported. The information must be submitted in the End of Well Report.
- 5.12 The Permit Holder shall take appropriate measures, in accordance with Good International Industry Practice (GIIP), to eliminate the occurrence of free oil resulting from NADF drill cuttings, which measures include performing a sheen test at least two (2) times per day in the drilling cuttings. The results of each sheen test must be reported in the End of Well Report.
- 5.13 The Permit Holder shall treat oily or contaminated effluents from the drilling unit, drainage systems, bilges ballasts and vessels, etc., via the oil-water separator, prior to discharge to abide with the 1-day minimum oil and grease limit of **42 g/L** and the 30-day average of **29 mg/L**, (in accordance with the *IFC EHS Guidelines for Offshore Oil and Gas Development*) and submit (in both a printed copy and in an editable Standard Reporting Matrix), a summary of the oil and grease discharge data in monthly reports throughout the duration of the project.
- 5.14 The Permit Holder shall prohibit the discharge of completion and well work-over fluids that have not been neutralized to attain a **pH of five (5) or more**. Prepare a report on completion and well work-over fluids. The report must include but not be limited to the pH of the fluids in the discharge. This information must be submitted in the End of Well Report.
- 5.15 The Permit Holder shall install and maintain a bilge-oil separator and undertake maintenance of oil-water separator equipment in accordance with MARPOL 73/78 requirements.
- 5.16 The Permit Holder shall treat bilge water in accordance with MARPOL 73/78 requirements to achieve an oil in water content of **<15 ppm** (parts per million). A consolidated report of oil in water content of each bilge water discharged shall be submitted to the Agency as part of the End of Well Report.
- 5.17 The Permit Holder shall prohibit the discharge of wastewater from the on-board Sewage Treatment Plant unless it complies with the aquatic discharge standards as set out in MARPOL 73/78 regulations.
- 5.18 The Permit Holder shall prohibit the use of drilling fluids for which diesel is the principal component.

Environmental Permit Ref. No.: 20191001-EEPGL-24

Issued under the Environmental Protection Act, Cap. 20:05, Laws of Guyana, the Environmental Protection (Amendment) Act, 2005, and the Environmental Protection (Authorisations) Regulations, 2000.

- 5.19 The Permit Holder shall prohibit the discharge of drilling fluids which contain used or waste engine oil, cooling oil, gear oil or lubricants.
- 5.20 The Permit Holder shall ensure that the residual chlorine concentration of each treated sewage discharged is below **0.5 mg/L** in accordance with MARPOL 73/78 regulations. A consolidated report of residual chlorine concentration of each treated sewage discharged shall be submitted to the Agency as part of the End of Well Report.
- 5.21 The Permit Holder shall discharge ballast water in accordance with established International Maritime Guidance and Legal Requirements including the International Convention for the Prevention of Pollution from Ships (MARPOL).
- 5.22 Curbs, gutters, drip pans, and drains shall be installed in deck areas in a manner necessary to collect all contaminants prior to discharge. All gravity drains shall be equipped with a water trap or other means to prevent gas in the sump system from escaping through the drains.
- 5.23 The Permit Holder shall perform a Static Sheen Test (stating the method used) on separate samples of applicable waste discharges. If the static sheen test indicates the presence of free oil, discharge of the tested material shall cease. If subsequent tests do not indicate free oil, discharge may continue.
- 5.24 The Permit Holder shall ensure that the temperature within the thermal plume of cooling water discharge is within **three (3) degrees Celsius** of ambient seawater temperature within 100 meters of the discharge point(s).
- 5.25 The Permit Holder shall not discharge diesel oil, halogenated phenol compounds, or chrome lignosulphonate.
- 5.26 The Permit Holder shall perform daily visual inspections of discharge points to detect if there is any floating solid or discolouration in the surrounding waters and submit a summary of observations in the End of Well Report.
- 5.27 The Permit Holder shall ensure that all containers containing hydrocarbons, chemicals, drilling fluids, and hazardous materials are placed inside an impervious berm or otherwise protected to contain spills. Drainage shall be directed away from the drilling rig to a sump. Drains and sumps shall be constructed to prevent seepage.
- 5.28 The Permit Holder shall ensure that leak detection mechanisms, in accordance with Good International Industry Practice (GIIP), are in place for the equipment, treatment and storage facilities (fuel, chemical, etc.).

Environmental Permit Ref. No.: 20191001-EEPGL-24

Issued under the Environmental Protection Act, Cap. 20:05, Laws of Guyana, the Environmental Protection (Amendment) Act, 2005, and the Environmental Protection (Authorisations) Regulations, 2000.

- 5.29 The Permit Holder shall track all additional effluent discharges according to field reporting spreadsheet: e.g., seawater, fresh water, cement slurry/dye, dry cement/bentonite/barite, blow-out preventer fluid, waste water from drill ship pits, completion and well work-over fluids, etc. Information must be submitted to the Agency in a monthly report.
- 5.30 The Permit Holder shall record the concentration ($\mu\text{g/L}$) of the following parameters/pollutants in discharges released into the marine environment and submit record (in both a printed copy and in an editable Standard Reporting Matrix) within one (1) month of completion of drilling activities:
- Cadmium;
 - Chlorine;
 - Mercury;
 - Methyl mercury;
 - Oil & Grease;
 - pH;
 - Total suspended solids; and
 - Temperature.
- 5.31 The Permit Holder shall submit a monthly report on the monitoring and management of the wastewater generated on each Project vessel.

6.0 WASTE MANAGEMENT

- 6.1 The Permit Holder shall ensure effective management and disposal of all wastes and recoverable materials generated by the project in accordance with GIIP, the Environmental Protection Act, Cap. 20:05, Laws of Guyana and the most recently Agency approved Waste Management Plan.
- 6.2 The Permit Holder shall seek the Agency's approval prior to deviating from any measure, practice or standard required by GIIP, the Environmental Protection Act, Cap. 20:05, Laws of Guyana and the most recently Agency approved Waste Management Plan.
- 6.3 The Permit Holder shall monitor and treat drill cuttings and mud waste prior to discharge into the environment. Drill cuttings must not exceed limits for heavy metals, hydrocarbons, biocides and other toxic substances, i.e. levels which may induce toxicity to marine organisms or directly/indirectly impact human health and/or the environment. These results must be submitted within the monthly report (in both a printed copy and in an editable Standard Reporting Matrix), along with the disposal method(s) utilised.
- 6.4 During the lifetime of the Project, the Permit Holder shall be responsible for stewarding and auditing the activities of all downstream subcontractors handling Project waste streams, and shall contractually require them to conduct all treatment and disposal of such waste streams in keeping with the most recently Agency

Environmental Permit Ref. No.: 20191001-EEPGL-24

Issued under the Environmental Protection Act, Cap. 20:05, Laws of Guyana, the Environmental Protection (Amendment) Act, 2005, and the Environmental Protection (Authorisations) Regulations, 2000.

approved Waste Management Plan. Any deviations from the Plan shall be immediately reported to the Agency.

- 6.5 The Permit Holder shall profile all waste streams in accordance with the most recently updated Waste Profile Sheet from the Agency.
- 6.6 The Permit Holder shall ensure that all third party contractors abide by the approved Revised EAMP dated October, 2020, the most recently Agency approved Waste Management Plan and the most recently Agency approved Oil Spill Response Plan, for the disposal of all forms of waste produced and obtained, and submit monthly reports (in both printed copy and in an editable Standard Reporting Matrix) from third party disposal services, including but not limited to, information on the final deposit of the waste and compliance with any testing requirements prior to final deposit.
- 6.7 The Permit Holder shall handle, store, and dispose of sewage and sullage in accordance with Annex IV of MARPOL 73/78, Regulations for the Prevention of Pollution by Sewage from Ships.
- 6.8 The Permit Holder shall operate the incinerator to combust **only** used/waste oil. Burning of any other waste in the incinerator is **strictly prohibited**.
- 6.9 The Permit Holder shall implement lifting and transfer procedures to cater for retrieval of any waste accidentally released overboard.
- 6.10 The Permit Holder shall record any accidental release of waste into the marine environment and corrective actions implemented and submit a copy of the Report to the Agency **within twenty-four (24) hours** of the release. A compilation of such reports must be included in the End of Well Report.
- 6.11 The Permit Holder shall manage and dispose of putrescible waste in accordance with Annex V of MARPOL 73/78, Regulations for the Prevention of Pollution by Garbage from Ships.
- 6.12 The Permit Holder shall prohibit the disposal of equipment, cables, chains, containers, or other materials into the offshore environment.
- 6.13 Materials, equipment, tools, containers, and other items used which are of such shape or configuration that they are likely to snag or damage fishing devices shall be handled and marked as follows:
 - a. all loose material, small tools, and other small objects shall be kept in a suitable storage area or a marked container when not in use and in a marked container before transport over offshore waters;
 - b. all cable, chain, or wire segments shall be recovered after use and securely stored until suitable disposal is accomplished; and

- c. skid-mounted equipment, portable containers, spool or reels, and drums shall be tracked using the request form and manifest.

6.14 Any of the items described in Condition 6.13 that are lost overboard shall be recorded on the facility's daily operations report, as appropriate, and reported to the Agency in the monthly report.

7.0 RADIOACTIVE SOURCES MANAGEMENT

7.1 General Safety Measures for Radioactive Sources

The Permit Holder shall comply with the US Nuclear Regulatory Commission Regulations on Radioactive materials, as well as, the guidelines outlined within the IAEA - TECDOC series reports as cited below:

- a. DS379 International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources January (2010).
- b. International Basic Safety Standards for protection against Ionizing radiation and for the safety of Radiation sources, Safety Series No. 115 (1996).
- c. RS-G-1.1 Occupational Radiation Protection (1999).
- d. RS-G-1.8 Environmental and Source Monitoring for Purposes of Radiation Protection (2005).
- e. RS-G-1.10 Safety of radiation generators and sealed radioactive sources (2006).
- f. GS-G-2.1 Arrangements for Preparedness for a Nuclear or Radiological Emergency (2007).

7.2 Transport Safety Measures for Radioactive Sources

- a. TS-G-1.3 Radiation Protection Programmes for the Transport of Radioactive Material (2007).
- b. TS-G 1.5 Compliance Assurance for the Safe Transport of Radioactive Material (2009).
- c. TS-R-1 Regulations for the Safe Transport of Radioactive Material (2009).
- d. TS-G-1.2 (ST-3) Planning and Preparing for Emergency Response to Transport Accidents involving Radioactive Material (2002).

Where *GS refers to standards for General Safety, RS to Radiation Safety and TS to Transport Safety.

Ensure all activities related to the transport, use and handling of the Radioactive Sources comply with the IATA Dangerous Good Regulations and the technical documents of the IAEA (see Condition 7.1 above).

Environmental Permit Ref. No.: 20191001-EEPGL-24

Issued under the Environmental Protection Act, Cap. 20:05, Laws of Guyana, the Environmental Protection (Amendment) Act, 2005, and the Environmental Protection (Authorisations) Regulations, 2000.

7.3 Radiation Protection

- a. Radiation Safety Officer (RSO):
 - i. Appoint a RSO, within one (1) week of commencement of the project to oversee the radiation protection programme. The name and qualifications of the RSO shall be submitted to the Agency within one (1) week of appointment.
 - ii. Conduct continuous training of all Occupationally Exposed Personnel (OEP) on the presence and type of radioactive sources on board and on the safety procedures for handling and transport of radioactive materials as highlighted in Permit Conditions 7.1 and 7.2.
 - iii. Document and submit to the Agency a report on the frequency of the training cycles and names and designations of recipients.

7.4 Radiation Monitoring

- a. Source Monitoring:
 - i. Maintain a source inventory and register of the activity level of all radioactive sources during its period of use. A Geiger Muller Detector owned and stored within the facility is to be used to take readings of activity level.
- b. Environmental Monitoring:
 - i. Conduct area surveys of sites on the vessel/project where radioactive sources are used. A copy of the survey must be immediately made available to the Agency if requested.
 - ii. Inspect the ship daily to ascertain whether all emissions are below relevant dose limits, and provide every two (2) months, a report to the Agency, including detailed recordings of the source inventory maintained in accordance with Condition 7.4.1.
 - iii. Immediately inform the Agency if emissions exceed dose limits.
 - iv. Individual Monitoring:
 - A. The Permit Holder shall provide means for OEP to monitor their radiation exposure accurately in the presence of a radioactive source(s), as well as, their accumulated exposure during their tenure on the project.

7.5 Personal Protective Equipment (PPE)

- a. The Permit Holder shall equip all OEP responsible for the use/operation of the equipment with appropriate Personal Protective Equipment (PPE) including but not limited to remote handling devices and shields.

7.6 Warning Labels

- a. All radioactive sources must be clearly labelled in its packing with the following symbol:



- b. Clearly label the locations where radioactive sources are stored and used in large visible block letters against a yellow background.

7.7 Radioactive Source Storage and Use

- a. The Permit Holder shall not use Radioactive Sources for any purpose other than the approved intended use and ensure that their use is restricted to the permitted **Lancetfish-2** Well site.
- b. The Permit Holder shall prohibit smoking in locations where radioactive sources are used or stored.
- c. The Permit Holder shall apply best management practices that align with international policies and guidelines for the transport, handling and use of radioactive sources including practices whereby:
- all sources are housed when not in use, in an adequately shielded containment, fully labelled, and isolated from areas of high occupancy;
 - sources are clearly labelled as indicated in Condition 7.6 (a) above with its name, Initial Activity level and the date of the recorded Initial Activity level; and
 - no radioactive source is be disposed of in the Marine Environment or onshore Guyana.

7.8 Radiation Protection Plan

- a. The Permit Holder shall establish and submit to the Agency within **two (2) weeks** of issuance of this Permit, a **Radiation Protection Plan** including all the above-mentioned requirements.

7.9 Disposal of Radioactive Sources

- a. The Permit Holder shall identify and inform the Agency of the party responsible for the disposal of the radioactive sources.

- b. The Permit Holder shall inform the Agency of the frequency with which sources will be replaced and disposed, at least **three (3) months prior** to the expiration of the useful lifetime of a radioactive source.

8.0 HAZARDOUS WASTES/MATERIALS MANAGEMENT

- 8.1 The Permit Holder shall comply with the provisions of the **Environmental Protection (Hazardous Waste Management) Regulations, 2000**.
- 8.2 The Permit Holder shall prepare and submit to the Agency in the End of Well Report, a report on the activities undertaken including:
 - a. identification information of the facility;
 - b. types and quantities of hazardous waste generated;
 - c. date concerning off-site shipments of wastes;
 - d. applied waste treatment standards;
 - e. a summary of any accidents and any action taken;
 - f. any waste minimisation efforts undertaken; and
 - g. any other matter the Agency may require.

The Agency considers the materials listed in Schedules I and II of the Environmental Protection (Hazardous Waste Management) Regulations, 2000, to be hazardous.

- 8.3 The Permit Holder shall utilise low toxicity chemicals, where practical in the operation. All chemicals must be utilised in accordance with their Safety Data Sheets.
- 8.4 The concentration of mercury and cadmium shall not exceed 1 mg/kg dry weight in stock barite, and 3 mg/kg dry weight in stock barite, respectively.
- 8.5 The Permit Holder shall prepare a report on the concentrations of cadmium and mercury in stock barite and suspended particles, contained in the discharge. This information must be submitted in the End of Well Report.
- 8.6 The Permit Holder shall perform a LC50 test of each mud system prior to drilling the well. The results of the LC50 test must be reported in the End of Well Report.
- 8.7 The Permit Holder shall secure fuel, oils and chemicals in areas far away from the discharge points of the vessel or onshore storage location, and in accordance with their Safety Data Sheets.

Environmental Permit Ref. No.: 20191001-EEPGL-24

Issued under the Environmental Protection Act, Cap. 20:05, Laws of Guyana, the Environmental Protection (Amendment) Act, 2005, and the Environmental Protection (Authorisations) Regulations, 2000.

- 8.8 The Permit Holder shall submit a report on the types and quantities of chemicals stored, consumed in the various processes, and discharged in the marine environment. Information must be contained in the End of Well Report.
- 8.9 The Permit Holder shall contain and return spent oils, lubes and chemicals to shore for disposal by an Agency authorised operator. Discharge of used/waste oils and chemicals in the marine environment or in any waterways is **prohibited**, as well as, disposal onshore if untreated.
- 8.10 Oil and chemical spills must be cleaned up in accordance with the most recently Agency approved Oil Spill Response Plan with the prior consent of the Agency and other relevant regulatory bodies.

9.0 EMPLOYEES

- 9.1 The Permit Holder shall operate in accordance with Guyana's **Occupational Safety and Health Act, No. 32 of 1997**.
- 9.2 The Permit Holder shall ensure that onshore and offshore contractors contracted by the Permit Holder are duly authorised by the Agency to conduct any activities related to the purposes for which this Permit is granted.
- 9.3 The Permit Holder shall ensure that adequate quantities of required personal protective equipment (PPE) are available, worn, and maintained in good condition for all personnel hazards.
- 9.4 The Permit Holder shall ensure that respiratory protection equipment are available in adequate quantities, worn, and maintained in good condition, and that employees are trained to use the equipment.
- 9.5 The Permit Holder shall ensure that employees engaged in an activity where there is a hazard of falling ten (10) or more feet are wearing a safety belt or harness secured by a lanyard to a lifeline, drop line, or fixed anchorage.
- 9.6 The Permit Holder shall ensure that each person wears an approved personal flotation device (PFD) when there is a hazard of falling into the water.
- 9.7 The Permit Holder shall ensure that eyewash equipment/stations are immediately available near areas where there is a reasonable probability that eye injury may occur.
- 9.8 The Permit Holder shall ensure that all staging areas and other work surfaces, and all ramps, stairways and other walkways are clear of all tripping and slipping hazards.

Environmental Permit Ref. No.: 20191001-EEPGL-24

Issued under the Environmental Protection Act, Cap. 20:05, Laws of Guyana, the Environmental Protection (Amendment) Act, 2005, and the Environmental Protection (Authorisations) Regulations, 2000.

- 9.9 The Permit Holder shall ensure that floors, decks, catwalks, and stairways are protected with suitable guards and rails or wire mesh fence.
- 9.10 The Permit Holder shall ensure that the helicopter landing deck on each vessel is equipped with perimeter protection.
- 9.11 The Permit Holder shall ensure that all openings in decks that are accessible to employees are covered, guarded, or otherwise made inaccessible when not in use.
- 9.12 The Permit Holder shall ensure that each vessel is equipped with an adequate number of operational obstruction lights and fog horns.
- 9.13 The Permit Holder shall ensure that the drillship/rig is equipped with at least two (2) life floats and an adequate number of alternatives to the life floats such as lifeboats, inflatable life raft, etc.
- 9.14 The Permit Holder shall ensure that a person is assigned to each life float, lifeboat, life raft, or survival capsule on each vessel who is responsible for launching the life float, lifeboat, life raft, or survival capsule in the event of an emergency.
- 9.15 The Permit Holder shall ensure that a well-maintained Type I Life Preserver is available for each person on board and that it is stored in an easily accessible location.
- 9.16 The Permit Holder shall ensure that well-maintained buoyant work vests are available for use by employees.
- 9.17 The Permit Holder shall ensure that a First Aid Kit is available and readily accessible on all vessels.
- 9.18 The Permit Holder shall ensure that stokes litter or other suitable safety litter capable of being safely hoisted with an injured person are available and readily accessible on all vessels.
- 9.19 The Permit Holder shall ensure that all vessels are equipped with operational Emergency Communications Equipment (ECE).
- 9.20 The Permit Holder shall ensure that the adequate number and type of portable and semi-portable fire extinguishers are available to all employees.
- 9.21 The Permit Holder shall ensure that all vessels are equipped with an operable general alarm system.
- 9.22 The Permit Holder shall employ a Health Safety and Environmental Officer and establish a Health and Safety Committee with responsibility for the implementation

Environmental Permit Ref. No.: 20191001-EEPGL-24

Issued under the Environmental Protection Act, Cap. 20:05, Laws of Guyana, the Environmental Protection (Amendment) Act, 2005, and the Environmental Protection (Authorisations) Regulations, 2000.

of the Health, Safety, Environmental and Social Management Plan and the terms and conditions of this Permit.

- 9.23 The Permit Holder shall conduct the necessary operational and preventative routine maintenance activities on the facility, and submit a schedule outlining the conducted maintenance activities on request by the Agency.
- 9.24 The Permit Holder shall employ a Safety Management System for the operations which system shall include, but shall not be limited to, regular inspection and maintenance, sewage plant, pipes, storage tanks. All maintenance activities shall be logged, documented and submitted in the End of Well Report.
- 9.25 The Permit Holder shall conduct a Hazard and Operability (HAZOP) Analysis and a Hazard Identifications (HAZID) Study which identify potential hazards or operability problems in all systems that can lead to a process upset and submit reports of same on request by the Agency.
- 9.26 The Permit Holder shall implement safeguards to prevent, control and mitigate all hazards which accompany operations.

10.0 EMERGENCY MANAGEMENT

- 10.1 In the event of a discharge or spill of any contaminant into the water or on land, the Permit Holder shall be responsible for eliminating or controlling the discharge/spill, cleaning up to the extent practicable, and remediating any resulting damage, and monitoring of the impact and taking appropriate measures to prevent, reduce and or mitigate impacts, consistent with the National Oil Spill Contingency Plan, the OSRP, and the Environmental Protection Act.
- 10.2 The Permit Holder shall notify the Agency **within twenty-four (24) hours** of the occurrence of any emergency, which emergency shall include but not be limited to:
 - a. the accidental or unintended discharge of contaminants;
 - b. sudden onset disaster;
 - c. an accident; or
 - d. any other occurrence, whether induced by natural, technological or human factors, which causes or threatens to cause severe environmental damage and harm to human health and livelihood.
- 10.3 The Permit Holder shall submit an "*Incident Notification Form for Spills in Offshore Operations*" using the most recent template to the Agency, **within forty-eight (48) hours** of any discharge of contaminants amounting to **five (5) gallons or more**. A follow-up incident notification form shall be submitted within **seventy-two (72) hours** of the submission of the initial notification form (**a total of five days after the discharge of contaminants**).

Environmental Permit Ref. No.: 20191001-EEPGL-24

Issued under the Environmental Protection Act, Cap. 20:05, Laws of Guyana, the Environmental Protection (Amendment) Act, 2005, and the Environmental Protection (Authorisations) Regulations, 2000.

- 10.4 The Permit Holder shall record and report to the Agency, on a monthly basis, all near misses, spills and unwanted or accidental discharges, amounting to less than five (5) gallons.
- 10.5 The Permit Holder shall provide the finances, equipment and technical capacity to adequately and, in accordance with International Petroleum Industry Environmental Conservation Association (IPIECA), API Standards and Recommended Practices, or GIIP, appropriately, respond to any emergency that may occur as a result of the execution of the Project.
- 10.6 The Permit Holder shall bear all costs of the restoration, rehabilitation and compensation required as a result of damage incurred due to an oil spill or other emergency resulting from the execution of the Project. The costs herein referred to shall be independently assessed and evaluated by a third party determined by the Agency. Nothing contained herein shall prejudice the right of public and private actors to pursue criminal and/or civil action against the Permit Holder.
- 10.7 The Permit Holder shall adhere to the most recent and updated Oil Spill Response Plan approved by the Agency.
- 10.8 The Permit Holder shall install a Main Emergency Shutdown Device (ESD) on the Drill Ship to initiate automatic shutdown actions if any unsafe condition is observed.
- 10.9 The Permit Holder shall provide notification of the Main Emergency Shutdown to the Agency **within twenty-four (24) hours** of its initiation, in addition to any other relevant information requested by the Agency thereafter.
- 10.10 The Permit Holder shall provide notification to the Agency, within **twelve (12) hours**, of resuming operations after an Emergency Shutdown event.
- 10.11 The Permit Holder shall implement robust personnel training and field exercises in oil spill prevention containment and response.
- 10.12 The Permit Holder shall prepare and submit to the Agency, the identification details of persons responsible for managing and participating in spill response efforts, their specific training requirements, responsibilities, authority, roles and contact details within **two (2) weeks** of issuance of the Environmental Permit for **Lancetfish-2** Well.
- 10.13 The Permit Holder shall undertake monthly maintenance and testing of oil spill response containment equipment, and submit a monthly report on their state of readiness.

Environmental Permit Ref. No.: 20191001-EEPGL-24

Issued under the Environmental Protection Act, Cap. 20:05, Laws of Guyana, the Environmental Protection (Amendment) Act, 2005, and the Environmental Protection (Authorisations) Regulations, 2000.

- 10.14 The Permit Holder shall adhere to cooperative measures with Government Agencies, as it relates to oil spill response as applicable and relevant notification process and procedures.
- 10.15 The Permit Holder shall maintain emergency spill response equipment on site for response to potential spills.
- 10.16 *In-situ* burning and the use of chemical dispersant(s) is prohibited, unless approved by the Agency, prior to application. An Approval granted in accordance with this condition shall be subject to such terms and conditions as may be required by the Agency, and shall be considered as forming part of the present Permit so that any breach or contravention thereof, shall be considered a breach or contravention of the Permit.
- 10.17 Conduct a Net Environmental Benefit Analysis (NEBA) and a Spill Impact Mitigation Assessment (SIMA), in accordance with GIIP, and include the findings therefor, in its application for an Approval under Condition 10.12. The Permit Holder shall ensure that findings detail whether *in-situ* burning and the use of chemical dispersant(s) is necessary in the circumstances.
- 10.18 Condition 10.14, above, is not to be interpreted as meaning that the Permit Holder will not be liable to fulfil its obligations under any other oil spill response plans, whether existing or forthcoming.
- 10.19 The Permit Holder shall ensure the installation of Blow-out Preventer (BOP) systems that:
- a. can be closed rapidly in the event of an uncontrolled influx of formation fluids; and
 - b. allows the well to be circulated to safety by venting the gas at surface and routing oil.
- 10.20 The Permit Holder shall ensure that the BOP system(s) is tested at installation, and at regular intervals (at least every **twenty-one (21) days**), and after the disconnection or repair of any pressure containment seal in the BOP system, in accordance with the American Petroleum Institute (API) Recommended Practice (RP) 53 for Blowout Prevention Equipment Systems for Drilling Wells.
- 10.21 The Permit Holder shall ensure that the subsea BOP stack is tested to the maximum anticipated wellhead pressure for the current well program.
- 10.22 The Permit Holder shall ensure that annular preventers do not exceed a working pressure that is greater than 70% of the preventer's rating.
- 10.23 The Permit Holder shall inform the Agency, in the End of Well Report, of tests conducted with the BOP equipment, detailing occasions where there was an influx of formation fluids, the well control methods applied, and their effectiveness.

Environmental Permit Ref. No.: 20191001-EEPGL-24

Issued under the Environmental Protection Act, Cap. 20:05, Laws of Guyana, the Environmental Protection (Amendment) Act, 2005, and the Environmental Protection (Authorisations) Regulations, 2000.

- 10.24 The Permit Holder shall ensure that the facility personnel undergo well-control drills, on a bi-weekly basis (every two (2) weeks) or as frequently as operations allow. The Permit Holder shall document these activities and make the records available to the Agency upon request.
- 10.25 The Permit Holder shall ensure that the BOP system design as well as its maintenance and repair are undertaken in accordance with GIIP.
- 10.26 The Permit Holder shall ensure that, at minimum, subsea BOP systems consist of one annular preventer, two shear ram preventers (one of which must be sealings) and two pipe ram preventers, equipped with choke and kill lines and failsafe choke and kill close valves.
- 10.27 The BOP must be able to close on the maximum outside diameter (OD) of the drill pipe string used for the drilling operations.
- 10.28 The Permit Holder shall ensure that the BOP systems operate (failsafe) in the event of a loss of control signal and hydraulic supply from the surface.
- 10.29 The Permit Holder shall ensure that, at the minimum, should automatic systems fail, subsea BOP systems can allow for the closure of one set of pipe rams and all blind-shearing type rams by Remotely Operated Vehicle (ROV) intervention.

11.0 COMPLIANCE MONITORING AND REPORTING

- 11.1 The Permit Holder shall notify the Agency in writing of the intended spud date **at least seven (7) days** prior to spud. Should spudding be delayed after notification was given, the Agency must be informed in writing of the delay and of the new intended spud date.
- 11.2 The Permit Holder shall submit the relevant safety case information including a risk assessment and management plan for the drilling of the **Lancetfish-2** well, with the notification required by Condition 13.1.
- 11.3 The Permit Holder shall sign all information submitted to the Agency. All submissions on analyses, contaminant reports, discharges or any other environmental data shall be submitted in both a printed copy and in an editable Standard Reporting Matrix.
- 11.4 The Permit Holder shall provide any information or copies of records requested within the timeframe requested by the Agency.
- 11.5 The Permit Holder shall monitor the implementation of the conditions of this Permit, insofar as they involve adherence by employees and all other third parties under your direction. Provide a list of all third parties, their responsibilities and



Environmental Permit Ref. No.: 20191001-EEPGL-24

Issued under the Environmental Protection Act, Cap. 20:05, Laws of Guyana, the Environmental Protection (Amendment) Act, 2005, and the Environmental Protection (Authorisations) Regulations, 2000.

compliance with the terms and conditions herein. Information must be contained in the End of Well Report.

- 11.6 The Permit Holder shall report to the Agency, any non-compliance with the Environmental Permit, within **twenty-four (24) hours** of the time the Permit Holder (or third parties) becomes aware of the said non-compliance, outlining the anticipated manner in which it may endanger human health or the environment.
- 11.7 Within **seventy-two (72) hours** of the awareness of the non-compliance, the Permit Holder shall submit to the Agency, a written report containing a description of the non-compliance, its causes, the period of non-compliance including exact dates and times known at the time of reporting, and the anticipated time it is expected to continue if the non-compliance has not been corrected within **seventy-two (72) hours**.
- 11.8 The Permit Holder shall submit **monthly reports** to the Agency on the progress of the operation and compliance with the conditions under which this Permit was granted on or before **the last day of the reporting month**. In addition, submit the End of Well Report at least **forty-five (45) days** following the completion of drilling operations.
- 11.9 The Permit Holder shall collaborate with the Agency to determine a sampling schedule to monitor any changes in the biological environment due to the discharge of wastes and drill cuttings into the marine environment within **two (2) weeks** of the issuance of the Permit. The results from these samples, the sample sites, site identification criteria, and methods of analyses (dates and times included), must be submitted to the Agency in the End of Well Report.
- 11.10 The Permit Holder shall comply with any lawful directions given by the Agency from time-to-time in furtherance of the implementation of any international or other obligations for the environmental protection of Guyana and surrounding regions (including neighbouring South American Coast and Caribbean Sea) likely to be affected.
- 11.11 The Permit Holder shall foster good corporate relations involving the Regional Council, Ministry of Agriculture and Fisheries Department, residents and other stakeholders, where general information can be shared and major concerns or complaints resolved. Evidence of the Company's corporate relations with Stakeholders shall be provided within **two (2) weeks** of issuance of the Permit. Immediately inform the Agency of any conflicts with other stakeholders.
- 11.12 The Permit Holder shall keep on site, a copy of the Manufacturer's Operating Manual for the Incinerator, which shall also be available upon request by the Agency.

Environmental Permit Ref. No.: 20191001-EEPGL-24

Issued under the Environmental Protection Act, Cap. 20:05, Laws of Guyana, the Environmental Protection (Amendment) Act, 2005, and the Environmental Protection (Authorisations) Regulations, 2000.

- 11.13 The Permit Holder shall be responsible for payment for all environmental audits and compliance monitoring requested and/or conducted by the Agency in relation to this Permit, as well as any independent investigations into pollution incidents.
- 11.14 The Permit Holder shall notify the Agency within **one (1) month** prior to well abandonment and submit all Well Abandonment Plan(s) for approval
- 11.15 The Permit Holder shall ensure that all well plugs:
- provide down-hole isolation of hydrocarbon and sulphur zones; and
 - prevent migration of formation fluids within the wellbore or to the seafloor.
- 11.16 The Permit Holder shall verify that the site is clear of obstructions by conducting a post-drill seafloor survey, using one of the following methods:
- scan across the location using sonar equipment.
 - videotape or take photographs of the site using a camera on a remotely operated vehicle (ROV).
 - use any other method approved by the Agency, if the particular site conditions warrant.
- The information gleaned from the post-drill seafloor survey shall be submitted as a component of the End of Well Report.
- 11.17 The Permit Holder shall submit to the Agency within **one (1) week** of commencement of drilling, a list and quantities of all additives to be used in the drilling mud to maintain its required properties. Information should be submitted in both a printed copy and in an editable Standard Reporting Matrix.
- 11.18 The Permit Holder shall submit for approval to the Agency within **two (2) weeks** of the issuance of the Permit, details of dispersants to be used in the event of spills.
- 11.19 The Permit Holder shall submit to the Agency, report(s) on the progress of the operation and compliance with the conditions under this Permit in the End of Well Report.
- 11.20 The Permit Holder shall maintain a precise inventory of all drilling fluid constituents added downhole for each well.
- 11.21 The Permit Holder shall retain records of all monitoring information, including, all calibration and maintenance records and all original strip chart records for continuous monitoring instrumentation, and copies of all reports required by this Permit, for a period of at least **three (3) years** from the date of the sample, measurement, report or application.

Environmental Permit Ref. No.: 20191001-EEPGL-24

Issued under the Environmental Protection Act, Cap. 20:05, Laws of Guyana, the Environmental Protection (Amendment) Act, 2005, and the Environmental Protection (Authorisations) Regulations, 2000.

- 11.22 The Permit Holder shall report to the Agency, the composition of each mud system used and discharged. Mud composition data shall be submitted to Agency within the End of Well Report.
- 11.23 The Permit Holder shall report the following for each mud system in the End of Well Report:
- a. base (generic) drilling fluid type;
 - b. product name and total amount (volume or weight) of each constituent in discharged drilling fluid;
 - c. total volumes of drilling fluids discharged; and
 - d. number of days of discharge.
- 11.24 The Permit Holder shall report the estimated maximum concentration of each constituent in the discharged drilling fluid, if no toxicity test is conducted on the drilling fluid system. Information must be contained in the End of Well Report.
- 11.25 Do not assign or transfer the Environmental Permit to any person without prior consent from the Agency.
- 11.26 The Permit Holder shall notify the Agency within **twenty-one (21)** days in the event of death, bankruptcy, liquidation or receivership of the Permit Holder or if the Company becomes a party to an amalgamation.
- 11.27 The Permit Holder shall inform the Agency prior to or within **thirty (30) days** of any change of name or ownership of the operation.
- 11.28 Geodata/shapefile information for the **Lancetfish-2** well shall be submitted to the Agency within **forty-five (45) days** following the completion of drilling operations. The information must be compatible with ArcMap Version 10.3 and must include, but not be limited to the following:
- a. Location (GIS coordinates with relevant attribute data) of the **Lancetfish-2** Well; and
 - b. Well information, including well depth, size, surrounding water depth, etc.
- 11.29 The Permit Holder shall submit to the Agency, a copy of the following documents/reports in the End of Well Report:
- a. Copy of the Oil Record Book;
 - b. Records of vessels and helicopter movements (routes, speed, heights, etc. where applicable) and of any incidents associated with these;
 - c. Garbage Record Book; and
 - d. Garbage Management Plan.

Environmental Permit Ref. No.: 20191001-EEPGL-24

Issued under the Environmental Protection Act, Cap. 20:05, Laws of Guyana, the Environmental Protection (Amendment) Act, 2005, and the Environmental Protection (Authorisations) Regulations, 2000.

- 11.30 All discharges are to be done in the manner outlined in the Revised Environmental Assessment and Management Plan for the Stabroek Block, dated October, 2020. The Permit Holder shall submit the testing protocols and procedures for each discharge within **two (2) weeks** of issuance of the permit.
- 11.31 The Agency reserves the continuous and irrevocable right to order the sampling and analysis of any discharges, effluent or waste emanating from the Project, to be analysed by an independent certified laboratory or institution, approved by the Agency, at the expense of the Permit Holder.

12.0 LIABILITY FOR POLLUTION DAMAGE

- 12.1 The Permit Holder shall have insurance of such type in such amount as is customary in the international petroleum industry in accordance with good oil fields practices for Petroleum Operations in progress Offshore Guyana in respect of:
- a. Loss or damage to all assets used in Project;
 - b. Pollution caused in the course of the Project for which EEPGL will be, jointly and severally, held responsible;
 - c. Loss or damage to property or bodily injury suffered by any third party in the course of the Project for which EEPGL is liable to, according to the terms of the policy;
 - d. EEPGL's liability to its employees engaged in the Project; and
 - e. Any other requirement made by the Agency under Condition 14.3 below.
- 12.2 Condition 14.1 shall not be interpreted to mean that the Permit Holder, its Parent Company, Servant and/or Agent will not be liable to any other existing or forthcoming applicable laws, rules and regulations related to insurance for Petroleum Operations within or out of the jurisdiction of Guyana.
- 12.3 The Permit Holder shall submit the environmental liability insurance policy required by Condition 14.1 to the Agency for its review and approval, including the following documents, **within two (2) weeks** of issuance of this Permit or as soon as reasonably possible:
- a. Provision of documentary evidence that the insurer is authorised to provide the insurance in the jurisdiction and of the insurer's financial strength;
 - b. Evidence of Bank of Guyana's no-objection or approval of the insurance policy, where applicable;
 - c. Provision of details of the amount of cover and the cost profile, evidence of authorisation of the institution or parent (insurer's) to provide insurance;
 - d. Where applicable, the submission of evidence of any supplementary cover required to cover gaps in the primary cover, inclusive of details relevant to the excess level which is the responsibility of the policyholder to cover;

Environmental Permit Ref. No.: 20191001-EEPGL-24

Issued under the Environmental Protection Act, Cap. 20:05, Laws of Guyana, the Environmental Protection (Amendment) Act, 2005, and the Environmental Protection (Authorisations) Regulations, 2000.

- e. Agreement to provide notification to the Agency of modification, cancellation, expiration, intent to renew, renewal or non-renewal and expiry dates of the policy;
 - f. Provision of reports on whether the insurance policy is maintained or renewed so that the Agency can determine if it is acceptable or if it requires a replacement policy, and
 - g. Provide the final insurance policy or certificate of insurance, evidence of financial strength and payment of premium.
- 12.4 The Permit Holder must as soon as reasonably practicable provide from the Parent Company or Affiliate Companies of Permit Holder and its Co-Venturers ("Affiliates") one or more legally binding agreements to the Agency, effective both during and after the term of the Permit, undertaking to provide adequate financial resources for Permit Holder and its Co-Venturers to pay or satisfy their respective environmental obligations regarding the Stabroek Block if EEPGL or its Co-Venturers fail to do so. As a consequence, EEPGL will be required to:
- a. Provide evidence of the following:
 - i. That the Affiliate(s) are authorised to provide that guarantee or agreement in this jurisdiction.
 - ii. That the Affiliate(s) have sufficient financial strength for the amount of the potential liability.
 - iii. That the Affiliate(s) have the corporate legal capacity to enter into the agreement.
 - b. Agree to the following:
 - i. To provide annual audited financial statements and notification if the Affiliate(s) are no longer likely to be able to meet specified financial obligations.
 - ii. To provide notification of cancellation, renewal or non-renewal and expiration dates of the Agreement.
- 12.5 Liability of the Permit Holder, agents and/or sub-contractors shall survive the expiration of this Permit, provided always that nothing in this clause shall alter, add to or abrogate the Limitation Act, Cap. 7:02 of the Laws of Guyana, in any manner whatsoever.
- 12.6 The Permit Holder, his Servant and/or Agents shall be strictly liable for any activity that causes pollution of the environment unless the person takes all reasonable and practicable measures to prevent or minimise any resulting adverse effect, in accordance with Section 19(1) (a) of the Environmental Protection Act, Cap. 20:05, Laws of Guyana.

Environmental Permit Ref. No.: 20191001-EEPGL-24

Issued under the Environmental Protection Act, Cap. 20:05, Laws of Guyana, the Environmental Protection (Amendment) Act, 2005, and the Environmental Protection (Authorisations) Regulations, 2000.

- 12.7 The Permit Holder, his Servant and/or Agents shall be liable for any activity that causes pollution of the environment unless the person takes all reasonable and practicable measures to prevent or minimise any resulting adverse effect, in accordance with Section 19(1) (a) of the Environmental Protection Act, Cap. 20:05, Laws of Guyana.
- 12.8 The discharge or release of contaminants such as hydraulic fluids, lubricants, fuel, or other industrial fluids relative to the Project, which are not stipulated or authorised herein are strictly prohibited. Any such discharge or release shall be deemed a violation of Section 19(1)(b) of the Environmental Protection Act Cap. 20:05, Laws of Guyana.
- 12.9 The Permit Holder shall compensate any Party who suffers any loss or damage as a result of the project. (Section 19(3)(e)) of the Environmental Protection Act, Cap. 20:05, Laws of Guyana)
- 12.10 The Permit Holder, his Servants and/or Agents shall be liable to penalties prescribed for any material or environmental harm caused by pollution of the environment intentionally or recklessly in accordance with section 39 (1), (2), (3) and (4) of the Environmental Protection Act, Cap. 20:05, Laws of Guyana.
- 12.11 The Permit Holder, his Servants and/or Agents shall be liable jointly and/or severally for any gross negligence or wilful misconduct to the marine environment, biodiversity, protected species and natural habitat with respect to any release or discharge, spill, contaminant fluids, oil, or lubricants from any facilities permitted under this project.
- 12.12 The Permit Holder, his Servants and/or Agents shall be liable jointly and/or severally for environmental damage due to pollution from its activities within Guyana, its territorial waters, contiguous zone, continental margins, continental shelf, and Exclusive Economic Zone, inclusive of damage to the marine environment, biodiversity, protected species and natural habitat with respect to any release or discharge, spill or contamination which is attributable to the Permit Holder and his agents or contractors. This is in accordance with Section 49 (1) of the Maritime Zones Act, Cap. 63:01, Laws of Guyana and is subject to any other existing or forthcoming laws, regulations and standards governing the protection of the marine environment.
- 12.13 Where it appears to the Agency that the Permit Holder is engaged in any activity that may pose a serious threat to natural resources or risk of serious pollution of the environment or any damage to public health, the Agency shall issue to the Permit Holder a Prohibition Notice ordering the immediate cessation of the offending activity in accordance with Section 27 of the Environmental Protection Act, Cap 20:05, Laws of Guyana.

Environmental Permit Ref. No.: 20191001-EEPGL-24

Issued under the Environmental Protection Act, Cap. 20:05, Laws of Guyana, the Environmental Protection (Amendment) Act, 2005, and the Environmental Protection (Authorisations) Regulations, 2000.

- 12.14 Should the Permit Holder contravene or be likely to contravene any condition of this Permit, the Agency may issue an Enforcement Notice in accordance with Section 26 of the Environmental Protection Act, Cap. 20:05, Laws of Guyana.

13.0 INSTITUTIONAL AUTHORITY

- 13.1 The Agency reserves the right to conduct regular inspections of the Permit Holder's operation as part of its monitoring and enforcement requirements under the Environmental Protection Act, Cap. 20:05, Laws of Guyana, the Environmental Protection (Amendment) Act, 2005, and the Environmental Protection (Authorisations) Regulations, 2000, and any forthcoming regulations, best practices, guidelines and standards made under this Act; including the most recent version of the 'Guidelines for the Conduct of Remote Inspections'.
- 13.2 The Permit Holder shall, at all times, allow entry to the permitted facility to any Officer designated by the Agency for the purposes of conducting inspections or any other legitimate business of the Agency.
- 13.3 The Agency reserves the right to review/amend the fees and conditions attached to this Permit in consideration of any changes in fee structure or environmental standards as determined by the Agency for projects of this nature.
- 13.4 The Permit Holder shall bear the expenses to facilitate transportation by authorised officers of the Agency to conduct offshore inspections.
- 13.5 The Agency shall have the right to cancel, modify or suspend this Permit for breach of any of the terms and conditions contained herein, or any other circumstance prescribed by Regulation 14(2) of the Environmental Protection (Authorisations) Regulations.
- 13.6 This Environmental Permit is not the final development consent. Permission from the other relevant regulatory bodies must be obtained prior to project implementation.
- 13.7 This Permit shall be governed by, interpreted and construed in accordance with the Laws of Guyana including but not limited to the Environmental Protection Act and Regulations and consistent with such rules of international laws as may be applicable or appropriate, including the generally accepted customs and usages of the international petroleum industry.
- 13.8 This Permit is effective from the period stipulated herein (**August, 2023 to July, 2028**).

Environmental Permit Ref. No.: 20191001-EEPGL-24

Issued under the Environmental Protection Act, Cap. 20:05, Laws of Guyana, the Environmental Protection (Amendment) Act, 2005, and the Environmental Protection (Authorisations) Regulations, 2000.

- 13.9 This Environmental Permit shall remain valid until **July 30, 2028**, unless otherwise suspended, cancelled, modified or varied in accordance with its provisions or the Environmental Protection Act, Cap 20:05, Laws of Guyana, the Environmental Protection (Amendment) Act, 2005, and the Environmental Protection (Authorisations) Regulations, 2000.
- 13.10 This Permit must be renewed by submitting a completed *Application Form for Renewal of Environmental Authorisation* to the Agency at least six months before this Permit expires, that is, no later than **January 30, 2028**.
- 13.11 Any late submission of renewal application(s) after the specified date as stated above, may require the Permit Holder to pay, in addition to the renewal fee, **a late penalty fee (accruing at the time such obligation was first owed for renewal) at a rate of two thousand dollars (GY\$2,000.00) per day for every day late**, until such renewal application is submitted to the Agency, without prejudice to any other rights of the Permit Holder in connection therewith.
- 13.12 Failure to comply with the requirements of this Permit or with applicable laws and regulations, whether existing or forthcoming, shall render the Permit Holder liable to prosecution and to penalties prescribed under the Environmental Protection Act, Cap. 20:05, Laws of Guyana, the Environmental Protection Regulation, 2000 and other applicable Laws of Guyana.

Signed by


Kemraj Parsram
Executive Director

on behalf of the Environmental Protection Agency.

Date

2023-08-08

Esso Exploration and Production Guyana Limited (EEPGL) hereby accepts the above terms and conditions upon which this Environmental Permit is granted and agrees to abide by the Environmental Protection Act, Cap, 20:05, Laws of Guyana, the Environmental Protection (Amendment) Act, 2005, the Environmental Protection (Authorisations) Regulations, 2000, and the Maritime Zones Act, Cap. 63:01, Laws of Guyana, and any applicable existing and forthcoming written law, best practices, guidelines, standards, codes of practice and other statutory or regulatory instruments made thereunder and of relevance to this project, taking into account the international rules and standards, international treaties and conventions to which Guyana is a party.



Environmental Permit Ref. No.: 20191001-EEPGL-24

Issued under the Environmental Protection Act, Cap. 20:05, Laws of Guyana, the Environmental Protection (Amendment) Act, 2005, and the Environmental Protection (Authorisations) Regulations, 2000.

NAME	MICHAEL B. PERSAUD
DESIGNATION	REGULATORY ENGAGEMENT MANAGER.
DATE	AUGUST 08, 2023
SIGNATURE	Michael B. Persaud.

