



Labyrinth
Management Group, Inc

Strategic Environmental, Safety & Health Solutions

**Annual Report on Consent Decree Compliance
During Calendar Year 2018
For
Transocean Operations
Conducted in Waters of the United States**

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Submitted to:



**Transocean Deepwater, Inc.
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EXECUTIVE SUMMARY

On February 19, 2013, Transocean Deepwater, Inc., Transocean Holdings LLC, and Triton Asset Leasing GmbH (hereinafter “Transocean”) entered into a Consent Decree with the United States (US) to resolve the Clean Water Act (CWA) and Oil Pollution Act (OPA) claims associated with the sinking of the Deepwater Horizon Mobile Offshore Drilling Unit (MODU) and Macondo Well oil spill in the Gulf of Mexico. The Consent Decree required Transocean to retain an Independent Consent Decree Compliance Auditor (the “Independent Auditor” or “IA”) to audit and report to the US each calendar year after the date of entry.

This report was prepared by Mr. Lance Traves with Labyrinth Management Group, Inc. (LMG) as the Independent Auditor’s annual report on Transocean’s compliance with the Consent Decree and an agreed-upon Performance Plan. A general summary of the requirements of the Consent Decree and Performance Plan is provided in Appendix A.

The time period covered by this annual report is the calendar year (CY) 2018 from January 1, 2018, through September 30, 2018. The time period covered by this annual report is the calendar year (CY) 2018 from January 1, 2018, through September 30, 2018. This time period was authorized by US governmental agencies based on the agreed upon schedule and criteria for Transocean’s close-out of the fifth and anticipated final year of Consent Decree applicability. The Independent Auditor understands that Transocean is self-certifying compliance with all Consent Decree and Performance Plan obligations that are triggered during the 4th quarter of 2018.

The annual report is written as a summary of the identified exceptions to Transocean’s compliance (i.e., non-compliance) with the Consent Decree and Performance Plan. As an exception report, the detailed verification information on Transocean’s compliance with a large number of requirements specified in the Consent Decree and Performance Plan is not discussed in this report.

METHODOLOGY AND SCOPE

As in prior years, the review activities and audit tasks used by the Independent Auditor to verify Transocean’s compliance with the Consent Decree and Performance Plan included five general components:

- Conducting planning, scoping, and coordination activities.
- Performing remote desk audit reviews of Transocean’s documents and information submitted to the US.

- Reviewing a wide range of documents and information requested from Transocean as auditor reference materials that were not required to be submitted to the US.
- Conducting a wide range of review and audit activities at Transocean's US drilling operations office located in Houston, Texas.
- Performing field audits and inspections of Transocean's drilling rigs operating in US waters.

The overall review, including auditing tasks and methods, was conducted in conformance with international auditing standards. Verification of Transocean's management system's compliance with Safety and Environmental Management System (SEMS) requirements was conducted consistent with federal regulations and Center for Offshore Safety (COS) guidance.

CALENDAR YEAR 2018 COMPLIANCE

Based on the results of the review and audit, it is the opinion of the Independent Auditor that Transocean was in full compliance with the Consent Decree and Performance Plan obligations applicable to the CY 2018 review period.

As in past years, this finding of full compliance with the Consent Decree should also be evaluated in the context of the large number of Consent Decree and Performance Plan compliance obligations that were met by Transocean. Transocean continued to be subject to more than 140 separate Consent Decree and Performance Plan requirements that often included multiple compliance items occurring throughout the 2018 review period.

CY 2018 OBSERVATIONS

During CY 2018, the Independent Auditor's review and audit of Transocean's compliance with the Consent Decree resulted in approximately 30 observations for additional formal discussion and follow-up. This number of observations submitted to Transocean for follow-up was about 30% less than in CY 2017. In the IA's opinion, the lower number of observations was at least partially the result of various improvements made and actions taken by Transocean in response to IA observations noted during prior years.

The majority of the CY 2018 observations were not directly related to specific Consent Decree compliance requirements. These types of audit observations were generally associated with Transocean's management systems and specific operational activities and requirements used to ensure operational integrity, SEMS compliance, and HSE performance.

More than half of the remaining CY 2018 observations were related to follow-up questions and requested clarifications related to Transocean's Management System (MS) audits of rigs operating in US waters. As part of the typical follow-up for each observation, Transocean was requested to provide additional documentation and/or clarification information regarding each observation. After review and evaluation of any additional information, an observation may have been closed-out or continued as an item for ongoing follow-up.

All of the 'material' observations noted during 2018 have been fully addressed and followed-up on by Transocean and the Independent Auditor. Based on the completion of these actions, all of the 'material' observations made in CY 2018 were fully closed-out by the Independent Auditor. Therefore, additional information on a subset of 'material' observations for follow-up is not included in the CY 2018 Annual Report.

FOLLOW-UP ON CY 2017 OBSERVATIONS

As part of the CY 2018 review and audit, the Independent Auditor also conducted follow-up on the observations noted in the CY 2017 Annual Report. A total of four (4) 'material' observations were discussed for follow-up in CY 2018. These included three observations from CY 2017 and one observation that was a continued roll-over from CY 2016.

A summary of these CY 2017 observations and the various follow-up actions conducted in CY 2018 is provided below.

1. Management System Audit Program

Transocean's Management System audit program has been operating effectively, however, as of the end of CY 2017, two important changes in the MS audit process have not been formally incorporated within Transocean's MS Audit Policy. In addition, Transocean was in the process of revising the MS audit policy's guidance on the "Classification of Audit Findings." Transocean indicated to the IA that an updated MS audit policy was expected to be issued during the first quarter of 2018.

In February 2018, Transocean issued the revised MS Audit Policy. Based on the Independent Auditor's review, Section 4.1 of the revised policy incorporated the changes noted and requested by the Independent Auditor. These changes included that agreed upon rig audit findings would be evaluated for classification during a period following the audit team's departure from a location. In addition, the revised "Classification of Audit Findings" incorporated important changes to the definition of a "Non-Conformance" finding that now include critical Operational Integrity deficiencies and failures. Finally, the revised policy eliminated the finding classification of "Audit Observation."

2. Transocean Annual Report – Incident Tracking Summaries

During CY 2017, the Independent Auditor’s review determined that the Consent Decree and Performance Plan language in Paragraph 15.g for Incident Tracking Reporting was broader than historically interpreted and completed by Transocean during annual reporting for this obligation. To correct this ‘material’ observation, Transocean agreed to include in the Company’s CY 2017 Annual Report and all future reports an Incident Tracking Summary that reports all the incidents listed in 30 C.F.R. § 250.188 (as modified with the \$250,000 property value damage stipulation).

On April 2, 2018, Transocean submitted their CY 2017 Annual Report that included an expanded Incident Tracking Report with the following additional reporting categories:

- Fatalities
- All incidents involving crane or personnel/material handling operations (subject to \$250,000 damage value)
- Injuries that resulted in the injured person not being able to return to work the day following the injury
- All incidents that required operational personnel to muster for evacuation for reasons not related to weather or drills.

The expanded CY 2017 Incident Tracking Report submitted by Transocean was consistent with the IA’s requested changes to more clearly meet the Consent Decree requirements.

3. SCE Inhibits Tracking

In CY 2017, the Independent Auditor continued to identify large differences in the number and type of safety-critical equipment (SCE) “inhibits” tracked by Transocean rigs. Because of the large differences across rigs, Transocean agreed in CY 2018 to revisit the fleet guidance and employee training on inhibit tracking to obtain greater consistency in the recording of inhibits cross rigs operating in the GOM.

As part of the CY 2018 review, the IA evaluated the overall consistency of inhibit tracking information reported for CY 2017 and the records generated during 2018. Based on this evaluation, inhibits recorded by rigs operating in US waters that made up the results included in the CY 2017 Incident Tracking Report were more consistent across Transocean’s rigs. In addition, interviews with Transocean employees indicated that Transocean’s guidance on recording of inhibits was better understood and more consistently implemented across rigs.

4. BOP-Related Equipment – Rubber Parts Management

As discussed in the CY 2017 Annual Report, the Independent Auditor has identified during past audits of Transocean rigs deviations from internal Transocean procedures for numerous BOP rubber goods in the warehouses on the rigs. As a result of the continued deficiencies, detailed inspections of the warehouse rubber rooms for BOP-related parts management were to continue as part of the IA's CY 2018 review and audit.

As part of the CY 2018 review, the Independent Auditor conducted detailed inspections of the warehouse rubber rooms for BOP-related parts management on four (4) rigs operating in the GOM. Based on the results of these inspections, non-conformances with Transocean's rubber good and labeling policy were not noted on the rigs. In addition, the detailed reviews did not identify rubber parts with dates that were close to expiration (i.e., less than 90 days) in the rigs warehouse inventory.

FIVE YEAR PERFORMANCE HIGHLIGHTS

Over the past five years, Transocean has undertaken organizational changes and implemented numerous new and improved policies, procedures, and programs to materially improve the personnel safety and operational integrity of the company's offshore drilling operations. As a result, Transocean has put in place many important sustainable measures to prevent the recurrence of an offshore drilling accident of the nature and magnitude of the Deepwater Horizon explosion and Macondo Well oil spill that occurred in the Gulf of Mexico.

Transocean's five-year performance under the Consent Decree obligations has been generally marked by continuous improvement in meeting and then often exceeding of the applicable requirements. Two obligations that highlight Transocean's improvement efforts include:

- Stop Work Authority
- Drilling Operations Audit-Review-and-Closeout Process

The Independent Auditor has provided Transocean with numerous observations and opportunities for improvements in these highlighted programs. In turn, Transocean has listened and incorporated many of these observations and opportunities into substantive improvements in the implementation and effectiveness of the programs.

Transocean has also undertaken major improvements in company programs that have included the identification and maintenance of safety critical systems, employee training and competency assessment, management system consistency, and employee communications. Many of these improvements are discussed in various "Observations" included within the Independent Auditor annual reports for prior years.

In the Independent Auditor's opinion, these findings combined with Transocean's compliance record, organizational changes, and various corrective actions during the past five years clearly demonstrate that the company has created a strong core "system safety culture." Furthermore, these risk management changes and improvements are now embedded as part of Transocean's operational systems and work performance culture. As a result, Transocean is now well along the path to operating offshore as a High-Reliability Organization (HRO).

Transocean's specific improvements and sustainable measures, many of which are rooted in Consent Decree obligations, can be used model for the offshore drilling industry to further improve the risk management and operational integrity of their operations. Many of these improvements and sustainable measures also exceed current US regulatory requirements.

The potential does exist for backsliding at Transocean and for reduced levels of effort to control process safety and operational integrity risks at other offshore drilling contractors working in US waters. As a result, Transocean and the offshore oil and gas sector must as a whole embrace a strong culture of system safety and operational integrity as an important competitive advantage. This appears to have occurred at Transocean. Therefore, the value of becoming an HRO at the company is recognized in both business planning and operational budgets.

THE INDEPENDENT AUDITOR

US agency representatives approved Mr. Traves as Transocean's Independent Auditor on March 31, 2014. He is not an officer or employee of Transocean and has no executive, director, a managerial or supervisory role with Transocean. LMG and Mr. Traves have no other contracts with Transocean and have no other financial interest in Transocean that would or might be seen as impairing independence and objectivity.

TRANSOCEAN'S COOPERATION AND TRANSPARENCY

Transocean's senior management and all other company employees fully cooperated with the Independent Auditor during the review and verification of the Company's compliance with the Consent Decree and Performance Plan. Transocean was also fully transparent regarding the information, documents, and observations used to verify compliance with the Consent Decree and Performance Plan for CY 2018.

There is no reason to believe that Transocean knowingly made any misstatements or provided false information to the IA during the performance of the CY 2018 review and audit.

LIMITATIONS AND REPRESENTATIONS

All compliance reviews and audits involve performing tasks and undertaking procedures to obtain and review information or evidence determined to be necessary by the auditor for meeting the objectives of the audit. The tasks and procedures selected for this review depended, to a certain extent, on the professional judgment which included an assessment of the risks of material misstatement of the findings.

Information required to complete the review and audit was primarily obtained from Transocean, and to a much lesser extent, external third-party entities. To the extent that the information and records from Transocean or other external sources were relied upon to verify compliance and form opinions; the information and records were assumed to be true, accurate, and complete. Certain provisions of the Consent Decree and Performance Plan are subject to potential interpretation because specific definitions are not provided within these documents. Compliance with these provisions was based on Transocean's interpretations unless specific interpretation information was provided by US agency representatives.

Transocean's submissions to the US, which were subject to regulatory agency review, were not reviewed for determinations of compliance with applicable regulatory requirements. In addition, the review and audit did not generally include a technical expert evaluation of the accuracy and content of Transocean's reports submitted to the US.

1.0 INTRODUCTION

This annual report on Transocean’s Consent Decree compliance for drilling operations in waters of the United States (US) during the calendar year (CY) 2018 is the fifth and anticipated final annual report to be prepared by the Independent Consent Decree Compliance Auditor (Independent Auditor). The previous annual reports evaluated Transocean’s compliance during CY 2014, CY 2015, CY 2016 and CY 2017. These earlier reports and this CY 2018 annual report can be found on Transocean’s website at <http://www.deepwater.com/macondo-us-consent-decree-compliance/reports-required-under-consent-decree>.

1.1 BACKGROUND INFORMATION

On April 20, 2010, a well control event associated with the completion of the Macondo Well in the Gulf of Mexico (GOM) caused a catastrophic fire and sinking of the Deepwater Horizon Mobile Offshore Drilling Unit (MODU). This event resulted in the release of hydrocarbons from the well for 87 days, resulting in a spill of national significance. Transocean Deepwater, Inc. was the owner of the Deepwater Horizon and the drilling contractor to BP Exploration and Production, Inc. (BP) for the Macondo Well at the time of the event. BP was the owner of the lease of the GOM area that contained the Macondo Well.

To resolve the Clean Water Act (CWA) and Oil Pollution Act (OPA) claims associated with these events, Transocean entered into a Consent Decree with the US that was filed on February 19, 2013.¹ The Transocean Consent Decree also included an agreed-upon Performance Plan that set forth the implementation plan and schedule for the various requirements of the Consent Decree.

The Consent Decree provides in Paragraph 22.a. That Transocean:

“retain an Independent Consent Decree Compliance Auditor (the “Independent Auditor”) who shall audit and report to the United States each calendar year after the date of entry, by April 2 of the following year (Paragraph 31.a.) on the Transocean Defendants’ compliance with Articles VI (Measures to Improve Performance and Prevent Recurrence) and VIII (Reporting) of this Consent Decree.”

This annual report on Consent Decree compliance has been prepared by the Independent Auditor based on evaluation and audit work conducted during the first three (3) quarters of CY 2018. This slightly shorter audit time period was authorized by US governmental agency representatives overseeing overall performance of the Consent Decree.

¹ The specific parties to the Consent Decree were Transocean Deepwater, Inc., Transocean Holdings LLC, and Triton Asset Leasing GmbH, In Re: Oil Spill by the Oil Rig “ Deepwater Horizon” in the Gulf of Mexico, on April 20, 2010, US District Court, Eastern District of Louisiana, MDL No. 2179, Section: “J” Judge Barbier.

This Annual Report for CY 2018 is submitted to Transocean specifically to comply with the requirements of Consent Decree Paragraph 22.a. Transocean is to operate under the requirements of the Consent Decree and Performance Plan for a minimum of five (5) years.

1.2 PREPARATION OF THE ANNUAL REPORT

The Annual Report for CY 2018 was prepared by Mr. Lance Traves with Labyrinth Management Group, Inc. (LMG) as the Independent Auditor. As discussed in Section 1.0, the time period covered by this report is January 1, 2018, through September 30, 2018 (i.e., the 1st through 3rd Quarters of CY 2018). This slightly shorter time period was authorized by US governmental agencies based on the agreed upon schedule and criteria for Transocean's anticipated close-out of the fifth and final year of applicability of the Consent Decree.

The Independent Auditor understands that Transocean is self-certifying compliance with certain Consent Decree and Performance Plan obligations that were not fully met during the first three quarters of 2018 or are triggered during the 4th quarter of 2018. These obligations include, for example, BOP pre-deployment certifications, required Competency Assessment Program (CAP) actions for CAP employees that come due during the 4th quarter, and completion of 40 hours of risk management training for designated employees that had not met the required hours by the end of the 3rd quarter. In addition, the Independent Auditor's review of Transocean's Annual Report for CY 2018 will be limited.

In performing the duties of the Independent Auditor, Mr. Traves was supported by LMG staff, specifically, including Mr. Charles Sisia, Senior Consultant with LMG. Mr. Sisia worked under the direct supervision of Mr. Traves at all times, and all findings contained in this report were reviewed and approved by Mr. Traves as the Independent Auditor.

The annual report is written as a summary of the identified exceptions to Transocean's compliance (i.e., non-compliance) with the Consent Decree and Performance Plan. As an exception report, verification information on Transocean's compliance with a large number of requirements specified in the Consent Decree and Performance Plan is not discussed.

A general summary of the requirements of the Consent Decree and Performance Plan is being provided in Appendix A. Copies of the Consent Decree, and the Performance Plan is also available on Transocean's website at <http://www.deepwater.com/macondo-us-consent-decree-compliance>.

Transocean's website also contains additional reports prepared by Transocean and posted to the website to meet specific reporting requirements of the Consent Decree and Performance Plan for CY 2018 and prior years. Transocean is required to post the Independent Auditor's annual report on Consent Decree compliance for the CY 2018 within ten days of final issuance. Based on the early issuance, this date is anticipated to be no later than November 30, 2018.

1.3 INDEPENDENT AUDITOR'S ROLE

The Consent Decree provides in Paragraph 22.a. That the Independent Auditor shall:

“Review documentation and take such reasonable measures as may be appropriate to verify the Transocean Defendants compliance with Articles VI (Measures to Improve Performance and Prevent Recurrence) and VIII (Reporting) of this Consent Decree.”

Based on this broad authorization, the Independent Auditor developed a review and audit methodology for CY 2018, including various work plans. These work plans incorporated information gained from prior years reviews and obtained from observations during CY 2018. The work plans were implemented without any material changes or impediments from Transocean to the review, audit, and verification of Transocean's compliance with the Consent Decree and Performance Plan requirements. Additional information on the methodology and scope of the CY 2018 review and audit is provided in Section 2.0.

The language of the Consent Decree provides that the Independent Auditor is not intended to have and does not have the responsibility to monitor or the authority to “*exercise the regulatory, enforcement, or other role of the United States.*”² As a result, Mr. Traves, in his role as the Independent Auditor, did not verify the specific regulatory compliance (including the technical merit) of selected documents, plans, or procedures that were submitted by Transocean to US agency representatives for review during CY 2018. In these instances, the documents, plans, or procedures were reviewed for compliance with the Consent Decree's submission deadline and overall compliance with the Consent Decree's description of the required general content or information to be provided. In selected cases, the Independent Auditor may have provided feedback and comments to Transocean on the technical information and contents of plans and policies as a review and audit observation.

1.4 AUDITOR'S INDEPENDENCE

The Consent Decree provides that the Independent Auditor must be approved by the US and “shall not have any executive or management functions” within Transocean or assume the role of any of Transocean's officers, executives, directors, managers, or supervisors.³ Mr. Traves was proposed by Transocean to serve as the Independent Auditor in early 2014. US representatives approved Mr. Traves as Transocean's Independent Auditor on March 31, 2014.

Mr. Traves is the President of LMG, a privately-held strategic environmental, health, and safety (EHS) compliance and risk management consulting firm located in Medina, Ohio. Mr. Traves is not an officer or employee of Transocean and has no executive, director, a managerial, or supervisory role with Transocean. Transocean has retained Mr. Traves and LMG under a

² See Paragraph 22.b of the Consent Decree.

³ See footnote 3.

standard commercial contract to act as the Independent Auditor for the Consent Decree. LMG and Mr. Traves have no other contracts with Transocean and have no other financial interest in Transocean that would or might be seen as impairing their independence and objectivity.

1.5 TRANSOCEAN'S COOPERATION AND TRANSPARENCY

During CY 2018, Transocean's senior management and all other company employees continued to fully cooperate with the Independent Auditor during the review and verification of the Company's compliance with the Consent Decree and Performance Plan. Transocean also has continued to dedicate a large amount of financial and employee resources to (1) improving personal and process safety risk management and (2) complying with the Consent Decree and Performance Plan requirements.

Transocean's extensive cooperation in CY 2018 included responding again to a large number of specific inquiries and follow-up requests from the Independent Auditor for additional information and documents relevant to the wide range of requirements of the Consent Decree and Performance Plan. The additional information and documents requested by the IA were always provided by Transocean on a timely basis, subject to normal working requirements. The Independent Auditor was also provided access to Transocean employees and third-party contractors, including drill rig workers, managers, and subject matter experts (SMEs) as needed for interviews and follow-up.

Transocean also ensured that Independent Auditor had access to a wide range of Transocean senior executives, managers, and SMEs. This included conferring meetings between the Independent Auditor and Transocean senior executives, managers, and SMEs during Houston Office meetings and review conducted during 2018. The Transocean SMEs included personnel with expertise in drilling operations, operational integrity, MS auditing, subsea BOP department quality assurance, employee training and assessment, and maintenance.

In CY 2018, Transocean also continued to provide the Independent Auditor with unrestricted access to the work areas located on its drilling rigs (subject to health and safety restrictions). The Independent Auditor continued to shadow Transocean's internal management system auditors on drilling rigs during the performance of their assurance activities. Finally, Transocean provided employees to facilitate the IA's continued access to and viewing of the Company's electronic management systems, internal tools, and documentation resources, when requested.

Based on these and other actions, Transocean was transparent regarding the information, documents, and field inspections used by the Independent Auditor to verify compliance with the Consent Decree and Performance Plan for CY 2018. There is no reason for the IA to believe that Transocean knowingly made any misstatements or provided false information during the CY 2018 review and audit.

2.0 METHODOLOGY AND SCOPE

The CY 2018 review and verification of Transocean’s compliance with the Consent Decree and Performance Plan were conducted from January 1, 2018, through September 30, 2018. The methodology and scope used in conducting the review and audit were based on the following:

- knowledge and experience of the Independent Auditor,
- auditing standards and guidance from a number of organizations,
- compliance requirements of the Consent Decree and Performance Plan, and
- knowledge, experience, and information obtained during the performance of the reviews and audits conducted during prior years.

As during prior years, the CY 2018 review, including auditing tasks and methods, was conducted in general conformance with “International Standard ISO 19011: Guidelines for Auditing Management Systems”.⁴ This includes the use of an evidence-based approach and a systematic process. Consistent with ISO 19011, the review and audit methodology also focused on identifying performance risks and then working to minimize them. These performance risks would be associated with inadequate preparation, ineffective implementation of auditing tasks, and incomplete review of information relevant to verifying Transocean’s compliance with the Consent Decree and Performance Plan.

The CY 2018 review and audit methodology also generally conformed to ASTM International’s Standard Practice for Environmental Regulatory Compliance Audits (Designation E2107-14) and the Standard Guide for Environmental Compliance Performance Assessment (Designation E2365-14). This conformance included the auditor’s qualifications, the audit process, and the documentation and management of records.

Finally, verification of Transocean’s management system’s compliance with Safety and Environmental Management System (SEMS) requirements in 30 Code of Federal Regulations (CFR) Part 250, Subpart S, continued to be conducted in a manner consistent with these regulations and guidance from the Center for Offshore Safety (COS).⁵ This verification process included the following:

- 1) performing overnight field audits of Transocean’s drilling rigs operating in US waters during normal drilling operations,

⁴ ISO (the International Organization for Standardization) 19011 Standard was issued in 2011 to provide ‘guidance’ to users on establishing, implementing, and monitoring an audit program for management systems at private and public organizations.

⁵ COS (Center for Offshore Safety) guidance includes Publication COS-2-03 “Requirements for Third-party SEMS Auditing and Certification of Deepwater Operations” dated October 2012.

- 2) observing Transocean employees performing management system audits of Transocean drilling rigs during normal drilling operations;
- 3) reviewing the implementation of CY 2017 and CY 2018 changes to the Transocean's existing management system for conformance with SEMS requirements;
- 4) evaluating compliance based on the overall performance of the Transocean's various operational and rig maintenance management systems; and
- 5) reviewing overall HSE performance of the Transocean drilling rig fleet operating in US waters using metrics required to be tracked by the Consent Decree.

2.1 REVIEW AND AUDIT TASKS

The review activities and audit tasks used to verify Transocean's compliance with the Consent Decree and Performance Plan in CY 2018 continued to include five general components:

- Conducting planning, scoping, and coordination activities.
- Performing remote desk audit reviews of Transocean's documents and information submitted to the US.
- Reviewing information and providing Independent Auditor feedback on selected items related to Consent Decree and Performance Plan requirements that were not required to be submitted to the US.
- Reviewing a wide range of documents and information requested from Transocean as auditor reference materials that were not required to be submitted to the US.
- Conducting a wide range of review and audit activities at Transocean's US drilling operations office located in Houston, Texas.
- Performing field audits of Transocean's drilling rigs operating in US waters, specifically within the GOM.

Additional information on each of these components is provided below.

2.1.1 Planning, Scoping, and Coordination Activities

As a best management practice (BMP) during CY 2018, the Independent Auditor continued to conduct project coordination conference calls during selected months with Transocean's team of employees managing Consent Decree compliance. These project conference calls were again organized around an agenda developed by the IA with input by Transocean. Topics could include updates on Transocean operations, planning for review and audit activities, discussions of compliance submissions, and follow-ups on information and observations noted during the CY 2018 review.

The Independent Auditor also participated in periodic monthly conference calls organized and conducted by Transocean to discuss and report on compliance activities to US agency representatives. In addition, the IA also had conference calls with Transocean's senior managers and various SMEs on a number of times for specific topics and various audit observations during CY 2018. In total, the Independent Auditor participated in approximately a dozen Consent Decree related conference calls as part of the CY 2018 review.

As part of the CY 2018 review and audit, work plans were again developed for the overall performance of the verification project, audits of the Houston office, and field inspections of drilling rigs operating in US waters. Each work plan included a general discussion of the plan's objectives, the scope of work, coordination and reporting methods, and a proposed schedule.

The CY 2018 work plans were discussed with Transocean and to a lesser extent with US agency representatives. The work plans were implemented during the course of the review without material changes that would have adversely impacted the information and the results obtained.

2.1.2 Desk Audit Reviews

The Consent Decree and Performance Plan includes an extensive list of required Milestones and Deliverables as part of the Measures to Improve Performance and Prevent Recurrence, as well as reporting requirements that require Transocean's compliance. The required CY 2018 deliverables include BOP pre-deployment certifications, updated company plans, manuals, reports, and procedures, as well as the submission of various other types of information.

In addition, Transocean's Annual Report for CY 2017 was submitted to the US and posted to the Company's website on April 2, 2018. Therefore, the information provided within Transocean's CY 2017 Annual Report was included in the Independent Auditor's verification of compliance for CY 2018.

Consistent with prior years, as part of the CY 2018 review and audit, Transocean's submissions to the US were verified for compliance with required milestone dates and specific deliverable requirements. The review of milestone dates included requirements for follow-up submissions within specified times for select requirements. Review and verification of compliance with the deliverable requirements were based on whether, in the IA's opinion, the deliverable was generally responsive to the objective(s) of the Consent Decree and Performance Plan. Each deliverable was required to contain all specifically referenced information and documentation.

As discussed in Section 2.1.3, the review of Consent Decree submissions often included a detailed review of additional internal Transocean analyses and documentation that supported and were used as the basis for the submission to the US. Transocean is also required to post Consent Decree submissions to the Company's website (www.deepwater.com). Therefore, general compliance with the public posting requirements was also included in the audit.

2.1.3 Review of Requested 'Auditor Reference Materials'

In conjunction with the desk audit reviews of specific submissions to the US, a large number of 'auditor reference materials' were again requested by the Independent Auditor from Transocean in CY 2018. These materials provided additional background and technical information on operations that were relevant to the requirements of the Consent Decree and Performance Plan. More importantly, a review and audit of the requested auditor reference materials were often necessary to verify compliance.

The requested and reviewed auditor reference materials included Transocean's updated company organization charts, internal operating manuals, plans, and procedures; employee training and assessment materials; operational alerts and advisories; meeting minutes; drilling rig and equipment maintenance, testing, and inspection records; internal audit reports; detailed BOP surface and subsurface testing records, and drill rig personnel on board (POB) records. The Independent Auditor also requested and reviewed internal information on BSEE Incidents of Non-Compliance (INCs) and US Coast Guard Notices of Violation (NOVs) issued for Transocean drilling rigs operating in US waters.

In addition, a large number of internal records and operational event logs for rig incidents were reviewed during CY 2018. These included but were not limited to information on employee injuries, loss of containment events, stop work authority (SWA) events, serious near hit (SNH) and near hit (NH) event, unplanned musters, and well control events. Finally, Transocean also continued to provide a large amount of specific information relevant to Consent Decree compliance from the Company's electronic Global Management System (GMS) and Rig Maintenance System (RMS).

One example of the level of effort for the review of auditor reference materials is the review of documents and testing results associated with Transocean's BOP pre-deployment certifications submitted under the Consent Decree. The BOP pre-deployment certifications will include Transocean's BOP pre-deployment checklists, the BOP testing procedures and checklists that were completed, both electronic and hard copy testing results and reports, and typically third-party reports and certifications of the BOP pre-deployment maintenance and testing activities. As part of the Consent Decree compliance review, all of this information and these documents are reviewed for specific individual BOP deployments that are selected by the Independent Auditor with no input from Transocean. The review will include completeness, adherence with internal procedures and requirements, and the testing results in compliance with application requirements.

Another example is the review of annual BOP preventative maintenance (PM) gap analysis report submitted under Paragraph 15(c)(2) of the Consent Decree. This report is provided to the US as a summary document consisting of two pages of specific findings in Transocean's annual report. As part of the Independent Auditor continued review process, Transocean provided electronic files containing spreadsheet files detailing Transocean's internal analyses. As a result, the IA is confident that Transocean's continued preparation of the short annual summary report on BOP preventative maintenance gaps clearly is based on a level of effort that meets the general expectation for this type of Consent Decree requirement.

2.1.4 Review and Audit Activities of the Houston Onshore Office

Field audit tasks in CY 2018 included conducting one (1) week-long in-person audit at Transocean's onshore offices in Houston, Texas. During this office audit, Transocean made a wide range of senior managers and employee experts available for interviews and to provide additional information. The additional information these experts provided was especially important for the (1) verification of the Consent Decree-required pre-deployment BOP inspection and testing activities and (2) follow-up on Transocean actions related to the CY 2017 Annual Report observations and various technical observations noted during the CY 2018 review.

As discussed in Section 1.5, Transocean continued to have employees facilitate live access and viewing of information maintained in and generated by the Company's electronic management systems and internal recordkeeping tools including GMS and RMS. These electronic management systems and internal recordkeeping tools are used and relied upon by Transocean to demonstrate compliance with the majority of the Consent Decree and Performance Plan requirements.

The live access to these systems and tools enabled the continued random generation and selection of records for auditing in CY 2018. Transocean's extensive electronic management systems and records also allowed for a comprehensive review of Transocean's records, which was necessary to verify compliance with the selected requirements.

2.1.5 Drilling Rig Field Audits

In CY 2018, field audits of Transocean's drilling rigs were again conducted to provide for direct observation and verification that requirements of the Consent Decree and Performance Plan were being met during drilling operations. This continues to be essential for the Independent Auditor because selected requirements can only be independently and fully verified by direct observation and by review of the operating drilling rigs.

Four (4) drilling rigs operating in the GOM were field audited during CY 2018. The individual drilling rig audits ranged from three to six days in duration. All the audited rigs consisted of Transocean ultra-deep water drillships that included three (3) different Operators and one (1) new build drillship during the first year drilling operations in the GOM.

In addition, one field audit was of the Petrobras 10000 drillship that had drill floor accident resulting in a contractor fatality in December 2017. This was conducted by the IA to follow-up from the 2017 visit to this rig and to confirm the implementation of various corrective measures Transocean had undertaken in response to the fatality.

The drilling rigs audited in the field were selected by the Independent Auditor based on criteria that included the type of rig, Operator, activities on the rig, and the length of time the rig has operated in US waters. The dates of the field audits were coordinated with Transocean's internal management system (MS) audits and Transocean drilling. The Independent Auditor had the final decision on the scope and schedule of the drilling rig field audits.

The field audits included the direct observation of two (2) internal (i.e., Transocean) MS audits of rigs during drilling operations. The internal MS audits are part of the "Audit-Review-and-Closeout-Process" under Paragraph 15.a.1 of the Consent Decree and Performance Plan that Transocean implemented and performs routinely. Transocean also uses internal MS audits to fulfill the requirements of the International Safety Management (ISM) code. Direct, real-time observation of the performance of Transocean's internal MS audits increase the overall robustness of the compliance verification related to the requirement. In addition, the Independent Auditor's performance field audits concurrently with the internal audits increases the value of the field audits based on additional observations and information.

As discussed above, one (1) field audit included the direct observation of Transocean's operations on a new build drillship during the first year of drilling operations in the GOM. As part of this field audit, the IA reviewed the rig's drilling operations and equipment for the completion of actions undertaken on to address specific observations made on prior drill rigs of the same class and generation. The audit also included confirming the use and familiarity with Transocean's operational BOP checklists and procedures by the Subsea Supervisors and Senior Subsea Supervisors responsible for BOP testing and inspection.

The four (4) field audits of drilling rigs by the Independent Auditor represented approximately half (50%) of the Transocean drilling rigs that operated in US waters during CY 2018. For comparison, the SEMS field audit requirements in 30 CFR Part 250, Subpart S, which reference to COS requirements, require only that at least 15% of "the facilities operated" be audited.⁶

The scope of work conducted as part of the field audits during CY 2018 continued to include the following general topics and activities:

- Reviewing and following up on the rig's Safety Case, Major Accidents and Hazard Risk Assessment (MAHRA), Emergency Response Plan, the most recent MS audit report, BSEE Incidents of Non-Compliance (INCs), and information on rig loss of containment (LOC), lost work time (LWT) events, serious near hit (SNH) events, near hit (NH) events, and ultimate work authority (UWA) stop work events.

⁶ See "Requirements for Third-party SEMS Auditing and Certification of Deepwater Operations" COS-2-03, prepared by the Center for Offshore Safety and dated October 2012.

- Observing Transocean’s internal management system audit, including meetings, auditor’s inspections, reviews of records, and employees’ interviews.
- Participating in a tour of the rig including key drilling operational areas followed by additional inspections and reviews of other specific areas.
- Observing drilling and marine equipment testing, maintenance, and inspection activities.
- Reviewing permit-to-work (PTW) activities, written risk assessments (WRAs), and daily drilling and marine operational procedures.
- Conducting interviews with key personnel that included, but were not limited to, the Master/OIM, Chief Mate, “Well Control Personnel,” and “CAMS Employees,” as defined within the Consent Decree and Performance Plan.
- Conducting interviews with Operator and Contractor personnel, as available.
- Reviewing a wide range of rig-specific inspection and testing records for the maritime and drilling operations related to or required for Consent Decree compliance.

Transocean employees continued to cooperate fully during the planning and performance of the field audits of drilling rigs in CY 2018. The Independent Auditor was provided access to attend rig operational meetings, meet with all employees, and obtain Transocean records requested at the time of the fieldwork or as a subsequent follow-up to the performance of the field audits of drilling rigs.

2.1.6 Other Actions

As part of the CY 2018 review, the Independent Auditor reviewed and observed key Consent Decree training and assessment activities being conducted by Maersk on behalf of Transocean. The observation included attending a portion of a Maersk class on IADC “Well Sharp” well control class that included instructor assessment of Transocean personnel on well control simulators. This classroom observation was conducted on May 2, 2018.

Overall, based on the one (1) day of observation, the IA provided feedback to Transocean on the training and assessment activities. However, no potential concerns or issues related to the Consent Decree were identified with any aspects of course materials or assessment process. The Maersk class had interactive instructions, and the well control assessment was clearly designed to challenge the personnel to ensure further competency.

During CY 2018, Transocean also continued having drilling rig crews attend Transocean Integrated Crew Operations Response Training (TICORT) at Maersk. This new training program was discussed in the CY 2017 Annual Report.

The Independent Auditor also met face-to-face with Transocean's Macondo Team and SMEs for meetings on specific topics twice during 2018. The purpose of these meetings was to discuss SEMS-related observations and scope the IA's CY 2018 work based on the anticipated final year of the Consent Decree.

Finally, the Independent Auditor participated in a Five-Year Review meeting Transocean held with US governmental agency representatives in Washington, D.C. on February 26, 2018. This included a presentation of the prior four (4) years of work conducted and findings made by the IA under the Consent Decree and Performance Plan.

2.2 CLASSIFICATION OF RESULTS

Results of the review and audit of Transocean's compliance with the Consent Decree and Performance Plan requirements were classified into the following four categories:

- Compliance
- Compliance with System Exceptions
- Non-Compliance – Deficiency Finding
- Observations

This classification system is unchanged from that used for prior year reviews. The basis for these classifications is provided in Table 1. The classifications were developed based on the Consent Decree requirements, auditing standards, and guidance from various organizations, as well as professional knowledge and auditing experience.

As discussed in Section 1.1, detailed findings and verification information associated with Transocean's compliance with Consent Decree and Performance Plan requirements are not discussed in this report. This includes programs required by the Consent Decree and Performance Plan or systems that may have had exceptions identified but met the classification "Compliance with System Exceptions." For example, these exceptions may have included limited aspects of Transocean's SEMS program, internal Management System Audit (MSA) program, and Competence Assessment Program (CAP).

As provided in the ISO 19011 Standard on Guidelines for Auditing Management Systems, a "management system" is defined as a "system to establish policy and objectives and to achieve those objectives." During the review and audit of a "management system" or program for overall compliance, the identification of individual deviations and exceptions to strict conformance may not result in a non-compliance deficiency finding.

A non-compliance deficiency finding for a management system or program requires evidence of a clear gap in the development, implementation, and maintenance of the systems or a program's major elements or aspects.

Table 1: Classification of Review and Audit Results

CLASSIFICATION	DESCRIPTION
Compliance:	There is evidence that a requirement has been met with no exceptions by the Company or a representative sample.
Compliance with System Exceptions:	There is evidence of the development, implementation, and ongoing maintenance of required programs, processes, or systems; any identified exceptions to performance are <u>not</u> associated with systemic deficiencies, and all deficiencies have been corrected.
Non-Compliance – Deficiency Finding:	There is evidence of the failure to meet or fulfill a specific requirement by the Company or a representative sample. Or, There is evidence concerning a lack of development, implementation, or maintenance of required programs, processes, and systems, including the identification of systemic deficiencies in the implementation or maintenance of the required programs, processes, or systems.
Observations:	Material observations include evidence of current practices, procedures, operations, or conditions that (1) were not non-compliance related issues but could potentially result in future non-compliance issues or (2) represent potential process safety or drilling risk management issues. Additional observations may include questions and requested clarifications on issues that are subsequently closed without meeting the criteria for classification as a Material observation.

2.3 LIMITATIONS AND REPRESENTATIONS

As discussed in Section 1.3, Transocean’s submissions to the US that were subject to regulatory agency review were not reviewed for determinations of compliance with applicable regulatory requirements. This approach was based on the Consent Decree’s provisions for the role of the Independent Auditor.

The Independent Auditor’s review and the audit scope also do not include a technical “expert” evaluation of the accuracy and content of Transocean’s reports submitted to the US. The verification of compliance focused on the milestone date and a review to determine if the report was generally responsive to the Consent Decree and Performance Plan requirements. These requirements could include specific content, incorporating and using prescribed factors (e.g., technical feasibility, applicability, cost benefits) in the preparation of the report, and following specific procedures. In cases where the information contained in required Transocean CY 2017

annual reports were limited by confidentiality issues, the Independent Auditor requested and Transocean made available for review detailed backup information and analyses used as the basis for the submitted information.

In addition, all compliance reviews and audits involved performing tasks and undertaking procedures to obtain and review information or evidence determined to be necessary by the auditor to meet the objective of the audit. The tasks and procedures selected for this review depended, to a certain extent, on professional judgment, including an assessment of the risks of material misstatement of the findings.

In making those auditor risk assessments, Transocean's existing internal systems, procedures, and controls relevant to Transocean's compliance with the Consent Decree and Performance Plan requirements were considered. Consistent with generally accepted auditing practices, only a representative sample of Transocean's records or equipment may have been reviewed or inspected to meet the specific requirements of the Consent Decree and Performance Plan. For instance, when professional judgment was used to select samples for review and inspection, the objective was to minimize the risk of a material misstatement of the findings. Review and audit findings that required direct observation during field audits of the drilling rigs are also based on the onsite time periods.

Information required to complete the review and audit was primarily obtained from Transocean, including reports from the Company's electronic management systems; reports, plans, and procedures from the Company's document control system; and interviews of employees. To a much lesser extent, technical and regulatory information also was prepared by external, third-party entities. The external third-party information included pre-deployment inspection, maintenance, and testing verification records for well drilling operations. The information and records from Transocean or other external sources that were relied upon to verify compliance and form opinions were assumed to be true, accurate, and complete.

Certain provisions of the Consent Decree and Performance Plan are subject to potential interpretation because specific definitions are not provided within these documents. Compliance with these provisions was based on Transocean's interpretations unless specific interpretation information was provided by US agency representatives. In cases in which Transocean's interpretations were used, these interpretations appeared to be reasonable and were generally fully disclosed to the US agency representatives.

Finally, selected interpretations associated with verification of compliance with the requirements of the Consent Decree and Performance Plan may have also been discussed in the Independent Auditor's Annual Reports for CY 2014, CY 2015, CY 2016 and 2017. These interpretations continued to apply to the performance of the CY 2017 review and the preparation of this CY 2018 Annual Report.

3.0 FINDINGS

Based on the results of the review and audit, it is the opinion of the Independent Auditor that Transocean was in full compliance with the Consent Decree and Performance Plan obligations applicable to the CY 2018 review period.

As in past years, this finding of full compliance with the Consent Decree should also be evaluated in the context of the large number of Consent Decree and Performance Plan compliance obligations that were met by Transocean. Transocean continued to be subject to more than 140 separate Consent Decree and Performance Plan requirements that often included multiple compliance items occurring throughout the 2018 review period.

4.0 CY 2018 OBSERVATIONS

As during previous years, the Independent Auditor noted a number of observations during the CY 2018 review and audit of Transocean's compliance with the Consent Decree and Performance Plan. As discussed in Section 2.2, 'material' observations are defined as findings associated with practices, procedures, operations, or conditions that (1) were not a current compliance deficiency but could potentially result in a future compliance deficiency or (2) represent potential process safety or drilling risk-management issues. General observations may be related to follow-up questions and clarifications regarding specific Transocean actions or various information provided to the Independent Auditor.

As part of the CY 2018 review and audit, approximately 30 observations were reported to Transocean for additional formal discussion and follow-up. This number of observations submitted to Transocean for follow-up was about 30% less than in CY 2017. In the IA's opinion, the lower number of observations was at least partially the result of improvements made and actions taken by Transocean in response to observations made by the Independent Auditor during prior years. These observations led to improvement actions that were designed to expand clarity and ensure an even more robust management system and safety culture.

A majority of the CY 2018 observations were not directly related to specific Consent Decree compliance requirements. For observations not directly related to a specific Consent Decree requirement, the observations were often related to Transocean's management systems and specific operational activities and requirements used to ensure operational integrity, SEMS compliance, and HSE performance.

More than half of the remaining CY 2018 observations were related to follow-up questions and requested clarifications related to Transocean's Management System (MS) audits of rigs operating in US waters. The questions and requests for additional information also continued to be primarily related to (1) information obtained by the IA while onboard rigs during selected MS audits, (2) the performance of the audits, (3) the findings identified in the audits, and (4) confirmation of Transocean's required tracking and performance of corrective actions for specific MS audit findings. As part of the typical follow-up for each observation, Transocean was requested to provide additional documentation and/or clarification information regarding each observation. After review and evaluation of any additional information, an observation may have been closed-out or continued as an item for ongoing follow-up.

All the 2018 'material' observations noted in 2018 have been fully addressed and followed-up on by Transocean and the Independent Auditor. Based on these actions, these material observations have been fully closed-out by the IA. As a result, Transocean's completion of additional follow-up actions is not required. Therefore, additional information on a subset of material observations is not included in this report as was the case in prior years.

5.0 CY 2017 OBSERVATIONS FOLLOW-UP

As part of the CY 2018 review and audit, follow-up was also conducted by the Independent Auditor on the 'material' observations noted in the CY 2017 Annual Report. As part of the CY 2017 review and audit, three (3) material observations were discussed in the annual report.

For purposes of clarity, a summary of the corrective actions, follow-up review results, and additional information generated for the reported CY 2017 observations is provided below. Based on this information, these CY 2017 material observations were classified as corrected and closed-out during CY 2018.

5.1 MANAGEMENT SYSTEM AUDIT PROGRAM

As discussed in the CY 2017 observation, Transocean's Management System audit program has generally been operating effectively. However, as of the end of CY 2017, two important changes in the MS audit process had not been formally incorporated within Transocean's MS Audit Policy submitted under the Consent Decree in September 2014.

In addition, Transocean was in the process of revising the MS audit policy's guidance on the "Classification of Audit Findings" to (1) eliminate the "Audit Observation" category from findings that were related to non-compliance with Transocean policies and procedures not directly impacting personal safety and (2) further clarify the classification of an audit finding as a "Major Non-Compliance" finding.

Transocean indicated to the Independent Auditor that an updated MS audit policy was expected to be issued during the first quarter of 2018. In addition, this updated policy was to include changes to the MS audit program that eliminate Audit Observations and formally provide for the final classification of audit findings while onshore.

In February 2018, Transocean issued the revised MS Audit Policy. Based on the IA's review, Section 4.1 of the revised policy specifies that agreed upon rig audit findings will be evaluated for classification by the "Audit and Compliance group and relevant SMEs as appropriate, during a period following the audit team's departure from the location."

The revised MS Audit Policy also included a revised Annex guidance on the "Classification of Audit Findings." The revised Classification of Audit Findings incorporated the requested important changes to the definition of a Major Non-Conformance finding that enhance the value of an MS audit. Major Non-Conformance findings now include critical Operational Integrity deficiencies and failures, not just personnel safety issues. Finally, revised Annex guidance also eliminated the finding classification of Audit Observation and now any "nonfulfillment of a specified Company Requirement" is classified as a Non-Conformance finding.

Furthermore, all non-conformance findings require a Level 3 TOP-SET® investigation to be conducted. These completed changes in the Transocean MS Audit policy have fully met the Independent Auditor's recommendations for improvements in the MS audit program.

5.2 TRANSOCEAN ANNUAL REPORT - INCIDENT TRACKING SUMMARIES

During CY 2017, the Independent Auditor's review confirmed that the Consent Decree and Performance Plan language in Paragraph 15.g for Incident Tracking Reporting was broader than historically interpreted and completed by Transocean for this obligation. Specifically, Transocean did not include selected specific categories of "incidents involving Transocean Defendants' employees or contractors that Operators are required to report under 30 C.F.R. § 250.188 (as modified to include reporting of property or equipment damage greater than \$250,000 in value)".

To correct this 'material' observation, Transocean agreed to include in the Company's CY 2017 Annual Report and all future reports an Incident Tracking Summary that reports all the incidents listed in 30 C.F.R. § 250.188 (as modified). On April 2, 2018, Transocean submitted their CY 2017 Annual Report that included an expanded Incident Tracking Report with the following additional applicable reporting categories:

- Fatalities
- All incidents involving crane or personnel/material handling operations (subject to \$250,000 damage value)
- Injuries that resulted in the injured person not being able to return to work the day following the injury
- All incidents that required operational personnel to muster for evacuation for reasons not related to weather or drills.

The expanded CY 2017 Incident Tracking Report submitted by Transocean was consistent with the IA's requested changes to more clearly meet the Consent Decree requirements. As part of the CY 2018 review, the IA also reviewed Transocean's CY 2017 Incident Tracking Summary for completeness and accuracy. Based on this review, no omissions or errors were identified in the information used to generate Transocean's incident reporting data for CY 2017.

5.3 SCE INHIBITS TRACKING

Beginning in 2016 and continuing in 2017, the Independent Auditor identified large differences in the number and type of safety-critical equipment (SCE) "inhibits" tracked by Transocean rigs. Paragraph 15.g of the Consent Decree requires Transocean to annually report the number of corrective maintenance and inhibits (i.e. "temporary disabling") for all SCE.

Because of the large differences across rigs, Transocean agreed in CY 2017 to revisit the fleet guidance and employee training on inhibit tracking to obtain greater consistency in the recording of inhibits cross rigs operating in the GOM. As part of the CY 2018 review, the IA evaluated the overall consistency of inhibit tracking information reported for CY 2017 and the records generated during 2018.

Based on the Independent Auditor's review, the inhibits recorded by rigs operating in US waters that made up the results included in the CY 2017 Incident Tracking Report were much more consistent across Transocean's rigs. In addition, interviews with Transocean employees indicated that Transocean's guidance on recording of inhibits was better understood and more consistently implemented across the fleet.

5.4 BOP-RELATED EQUIPMENT - RUBBER PARTS MANAGEMENT

As discussed in the CY 2017 Annual Report, the Independent Auditor identified during past audits of Transocean rigs that numerous BOP rubber goods in the warehouses on the rigs did not have expiration dates noted on the packaging, including Transocean labels that provide for this information. Expiration dates for a subset of these rubber goods also were not recorded in the electronic records system maintained by the rig Materials Manager at the time of the audit.

Based on these findings, the IA conducted detailed inspections of rubber rooms used for BOP-related parts on Transocean rigs during field audits in 2017. These inspection activities did not identify significant non-conformances with Transocean's rubber goods storage and labeling policy for two of the three rigs audited. In addition, the single rig with significant non-conformances was new to US waters and had previously operated overseas. However, as a result of the continued deficiencies, detailed inspections of the warehouse rubber rooms for BOP-related parts management were to continue as part of the Independent Auditor's CY 2018 review and audit.

As part of the CY 2018 review, the IA conducted detailed inspections of the warehouse rubber rooms for BOP-related parts management on four (4) rigs operating in the GOM. Based on the results of these inspections, non-conformances with Transocean's rubber good and labeling policy were not noted on the rigs. In addition, the detailed reviews did not identify rubber parts with dates that were close to expiration (i.e., less than 90 days) in the rigs warehouse inventory.

6.0 FIVE-YEAR PERFORMANCE HIGHLIGHTS

As discussed in Section 1.0, the CY 2018 review is the anticipated final year of the Consent Decree. As a result, 2018 is anticipated to be the fifth and final year for the Independent Auditor to review and audit Transocean's operations, management systems, and risk management.

Because of this aspect, a few highlights of Transocean's five years of continuous improvement under the Consent Decree has been included in this report. For purposes of brevity, these highlights are focused on the following two Consent Decree requirements:

- Stop Work Authority
- Drilling Operations Audit-Review-and-Closeout Process

As part of compliance with the Consent Decree's obligations, Transocean has also undertaken major improvements in company programs that have included identification and maintenance of safety critical systems, employee training and competency assessment, management system consistency, and employee communications. Many of these improvements are discussed in various "Observations" included in the Independent Auditor annual reports for prior years.

Overall, Transocean's five-year performance under the Consent Decree obligations has been generally marked by continuous improvement in meeting and often exceeding of the applicable requirements. More importantly, in the IA's opinion, Transocean's compliance record, wiliness to implement changes, and completion of various corrective actions during the past five years demonstrates that Transocean has created a strong core "system safety culture." Based on these findings, Transocean is now paving the way towards operating offshore as a High-Reliability Organization (HRO).

An HRO is generally described as an organization that operates in high hazard environments with complex technologies on a "nearly error-free basis for long periods of time."⁷ Example HROs would be nuclear power plants and the military ammunition manufacturers. These "ultra-safe" HROs rely on the prevention of catastrophic risks by design and employee training within organizations that also blend robust corrective actions with formal structures designed to "ensure constant attention to risks, flexible detection of and recovery from problems, and regular collective learning and improvement".⁸

Furthermore, these risk management improvements are now further embedded as part of the Transocean's operational systems and work performance culture. As a result, the company's

⁷ Center for Catastrophic Risk Management (CCRM) at the University of California at Berkley, "Deepwater Horizon Study Group, Investigation of the Macondo Well Blowout Disaster," March 1, 2011, pp 79-81 and 95-96.

⁸ National Academies of Sciences, Engineering, and Medicine, Transportation Research Board Special Report 321, "Strengthening the Safety Culture of the Offshore Oil and Gas Industry", The National Academies Press. 2016 p 30.

performance of offshore drilling operations is now clearly focused on both personnel and process safety that includes Operational Integrity requirements to “monitor and maintain barrier integrity to prevent major accidents.”⁹

Finally, based on the Independent Auditor’s review, Transocean has completed a number of actions and implemented new policies and programs that directly correspond with the requirements for operating as an HRO. A few examples of these include:

- Working to ensure that Transocean policies and procedures are accurate, consistent, complete, well organized, and controlled;
- Requiring incorporation of SIMOPS reviews in daily Control of Work meetings for planned work to be conducted on rigs;
- Reinforcing the need for team “situational awareness” by providing employee training that incorporates this learning concept including entire crew major emergency management exercises;
- Establishing comprehensive employee competency requirements with assigned training and a detailed competency assessment process with specific requirement criteria;
- Expanding the tracking and communication of important HSE and key Operational Integrity (OI) information and metrics to senior managers and employees; and
- Incorporating metrics related to maintaining operations at the level of an HRO as key performance criteria for employee success within the company.

As a result of these changes, Transocean’s significant improvement in the overall risk management of the company’s drilling operations should be durable and sustainable into the future even with changes in the business or regulatory environment.

6.1 STOP WORK AUTHORITY

The Consent Decree requirement for Transocean’s establishment of a Stop Work Authority (SWA) procedure is designed to ensure that all employees and contractors have the “responsibility and authority, without fear of reprisal, to stop work... or decline to perform an assigned task when such person perceives any significant risk or danger exists (including but not limited to: loss of well control, spill, blowout, and loss of life).¹⁰ This requirement is a key component of the measures to improve performance and minimize risks of drilling operations.

⁹ Transocean’s HSE Policy Statement at <https://www.deepwater.com/Documents/HSE%20Policy%20Statement-FINAL.pdf>

¹⁰ Paragraph 15.a.2 in the Consent Decree Between The Plaintiff United States of America and Defendants Triton Asset Leasing GMBH, Transocean Holdings LLC, Transocean Offshore Deepwater Drilling Inc., and

The value of a SWA procedure is rooted in the knowledge that prior to the Deepwater Horizon accident the risk management policies of Transocean (and BP) already promoted as a goal: “no accidents, no harm to people, and no damage to the environment” and operating incident free in the workplace at all times.¹¹ However, preventing major accidents and process safety incidents require that individuals and company systems are continually accounting for changing conditions and circumstances. Offshore, these may include the drilling environment, how to perform a job or task, levels of uncertainty with test results, and different personnel.¹²

Therefore, the ability of employees to freely and immediately stop work on specific tasks or entire operations (i.e., drilling ahead, cementing, displacement) to reassess changing conditions and circumstances is critical to managing major accident and process safety risks in complex systems. The failure to stop work and reassess information including conditions and circumstances at multiple steps during the performance the Macondo Well completion and abandonment activities is a major reason for the inclusion of SWA authority and the requirement for the Ultimate Work Authority (UWA) in the SEMS II final rule.¹³

In 2013, at the start of the Consent Decree obligations, Transocean already had a “Time-out-for-Safety” (TOFS) conversation program for drilling operations.¹⁴ As a result, this established program was modified to include “Unplanned” TOFS procedures with the intent of meeting BSEE SEMS SWA requirements. This TOFS procedure was the SWA and UWA procedure in place when the Independent Auditor was approved in 2014. However, this TOFS policy did not include events having an “imminent risk of danger or harm.” In addition, the policy did not require UWA authorization to restart the work; only that a safety conversation occur correcting the situation and initiating Management of Change (MOC).

The SEMS II regulation on SWA and UWA does not include or provide for a qualification or provision regarding events triggering implementation of SWA or provide for the restart of work by any individual that is not the UWA. As a result, this deficiency was identified and reported by the IA to Transocean’s Senior Management early in 2014. Transocean subsequently modified the SWA and UWA policy in June 2014 to include the requirement that an unplanned TOFS “must be called anytime a person is unsure if safety can be maintained” including when there is “imminent risk or danger.”¹⁵

Transocean Deepwater Inc. In Re: Oil Spill by the Oil Rig Deepwater Horizon in the Gulf of Mexico, on April 20, 2010, US District Court, Eastern District of Louisiana, MDL No. 2179, Section: “J” Judge Barbier.

¹¹ Transocean “Health and Safety Policies and Procedures Manual”, Issue 03, Revision 07, HQS-HSE-PP-01, December 15, 2009.

¹² US Chemical Safety and Hazard Investigation Board, “*Investigation Report Volume 3, Drilling Rig Explosion and Fire at the Macondo Well,*” Report No. 2010-10-I-OS, 4/12/2016 pp 15-16.

¹³ Federal Register Vol. 78, No. 66 / Friday, April 5, 2013. The SEMS II Final Rule requires Operators to develop and implement a stop work authority that includes procedures and authorizes any personnel who witness an imminent risk or dangerous activity to stop work

¹⁴ Transocean “NAM - Health and Safety Policies and Requirements” Issue 01, Revision 00, July 1, 2011.

¹⁵ Transocean’s “GOM - Health and Safety Policies and Requirements”, Time Out for Safety, Section 2, Subsection 3, Issue 01 / Rev 04 Rev Date: June 4, 2014.

The revised policy also included examples of situations that could pose an imminent risk or danger. In addition, the 2014 policy revision required for the first time that all unplanned TOFS be escalated to the UWA for the decision to restart work if the individuals involved with the work did not come to an agreement that the reason for stopping work had been adequately addressed to mitigate the risk. Furthermore, the UWA was defined as the person that has overriding authority and responsibility for the installation (i.e., rig). The UWA was also required to be designated in writing and this information posted in an accessible public location.

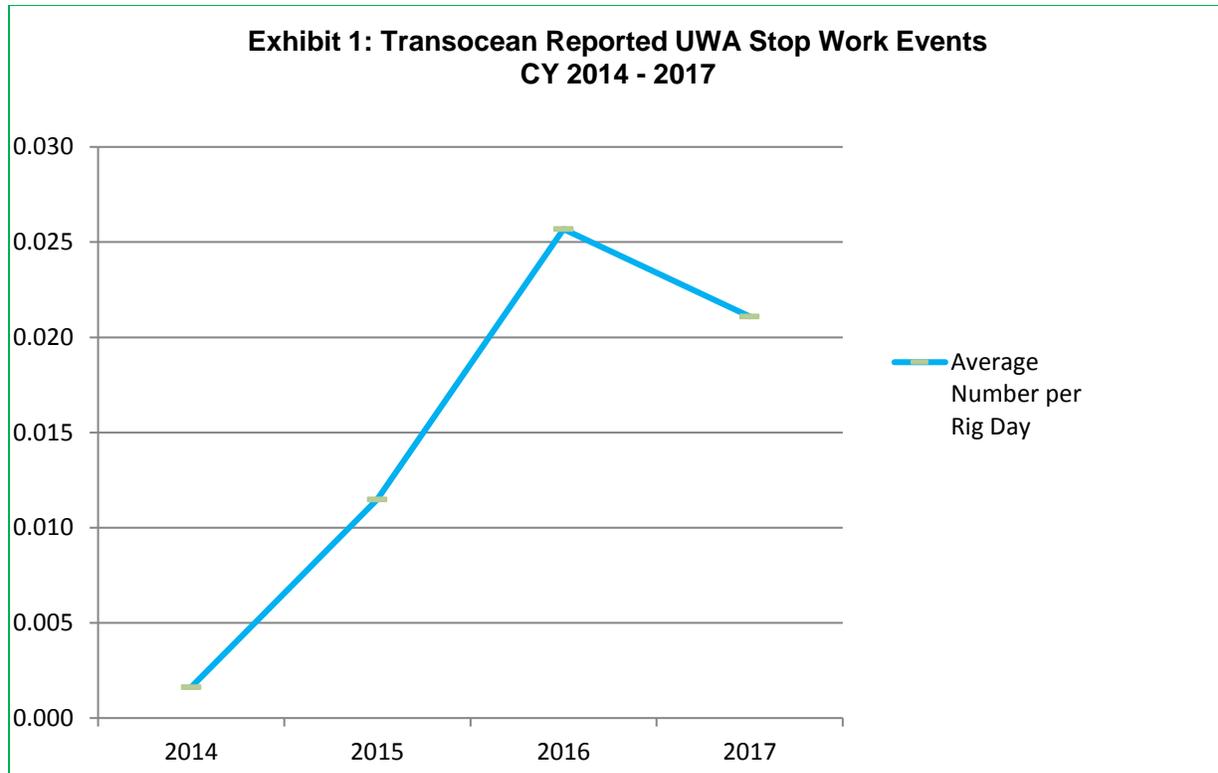
The revised June 2014 SWA policy required that the updated TOFS requirements be included in the HSE Orientation for all personnel and contractors and reviewed during all Transocean Weekly Departmental and General Safety meetings. The communication of the new TOFS requirements and SWA policy to personnel during daily pre-tour and weekly safety meetings were observed by the Independent Auditor on every drilling rig visited as part of field auditing activities. This is an important observation. In 2011, the National Commission on the BP Deepwater Horizon Oil Spill concluded that most of the failures at Macondo could be “traced back to underlying failures of management and communication.”¹⁶

Based on IA comments on the June 2014 SWA policy, Transocean subsequently issued an updated SWA policy in July 2015. The updated SWA policy included additional specific language referencing the TOFS policy applying to when an unplanned “Stop Work Event occurs” and included the definition of a Stop Work Event.

In the Independent Auditor’s opinion, the effectiveness of Transocean’s implementation and communication of the 2014 and 2015 TOFS SWA policy changes is demonstrated by the increase in the relative number of SWA events recorded on drilling rigs during 2014 through 2017. As shown in Exhibit 1 on the following page, the number of SWA events recorded on Transocean drilling rigs in 2015 was more than five times greater than in 2014, when standardized for total rig operating days in US waters. The increase continued in 2016 as the number of SWA events doubled from 2015.

In 2017, a decrease in the number of SWA events occurred. This may have resulted from personnel becoming more familiar with the specific guidance in the TOFS SWA policy. In addition, as discussed below, a change in the rig organizational structure that consolidated UWA responsibilities occurred in 2016. Transocean also began a number of efforts to reduce dropped objects, line of fire events, and other incidents in 2016.

¹⁶ National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling, “*Deepwater: The Gulf Oil Disaster and the Future of Offshore Drilling*”, 2011. As referenced in the National Academy of Sciences, “*TRB Special Report 321: Strengthening the Safety Culture of the Offshore Oil and Gas Industry*,” 2016, pp15-16.



Note: The number of rig days per year used to standardize the Transocean reported annual UWA SWA events was based on Transocean “Rig Tracking Status” reports submitted to the US.

The increase in SWA events on Transocean drilling rigs also appears to demonstrate a positive change in the company safety culture regarding the pressures of completing work within the planned time. The company’s communication efforts and rig management over the term of the Consent Decree have successfully created a work environment where employees and contractors are clearly empowered and personally comfortable calling for an unplanned TOFS (i.e., SWA Event) and elevating the decision making for restarting work to the UWA. This is an important change in the safety culture.

The National Commission also concluded that better management of decision-making processes was one of the factors that could have prevented the Deepwater Horizon Macondo Well incident. Clear and streamlined decision making is critical for managing the risks from low probability, high-consequence events such as the Deepwater Horizon Macondo Well incident. Consistent with addressing this finding, Transocean completed an important rig management organizational change to streamline and enhance the key decision-making process and the UWA policy on a rig in 2016. The organizational change was to consolidate the UWA responsibility and overall major emergency management decision making into a single new position consisting of the combined Master/Offshore Installation Manager (OIM).

Before 2016, the UWA for marine operations and major risk management decisions related to marine issues (loss of position, flooding, collision, etc.) was the responsibility of the Master (i.e., Captain). However, the UWA and decision maker for well-control related incidents and risk management emergencies was the OIM. Furthermore, the individuals occupying these two

separate positions typically came from very different operational backgrounds and work cultures.¹⁷ As a result, these differences introduced an additional level of complexity and potential uncertainty into the communication and decision-making process.

These potential issues were greatest during unplanned stop work events and emergency incidents that overlapped marine and drilling operations. Prior to the 2016 organization change, it was not clear when the OIM UWA responsibility and authority ended, and the Master's UWA responsibility, and authority began, particularly with respect to well control events. If strong personalities were in these respective positions there would be the potential for conflicts on what actions to undertake. Transocean's now well-defined consolidation of UWA, major incident, and emergency management decision making in the Master/OIM position on Transocean rigs eliminates many of the communication and social issues that could have interfered with this process and created conflicts prior to 2016. As a result, the command and control process on the rig is better aligned with operating as an HRO.

In 2016, Transocean also revised the TOFS policy that incorporates SWA to include the requirement that all "Controlled Procedures" within the Management System incorporate a planned TOFS as part of the procedure. This positive risk management change may also be a reason the number of unplanned TOFS SWA events declined in 2017. The requirement for taking a planned TOFS during a large number of work tasks conducted with Transocean's Controlled Procedures could have resulted in fewer unplanned TOFS events as the employees performing the work recognized and planned for adjustments during the planned TOFS.

Finally, Transocean appears to have fully integrated and further empowered the TOFS and SWA policy to enhance the "process safety" of all operations within the company in 2018. This has been accomplished by incorporating these concepts into key operational manuals outside of the HSE manual. For example, Transocean's updated Well Control Handbook states in numerous places in the discussion of well control principles, company policies, and procedures that personnel should not "take time second-guessing" kick indications such as flow show, but should just "shut in the well."¹⁸ The Well Control Handbook also clearly states that making an error and shutting the annular on a tool joint is preferred over waiting for calculations to be completed for accurate space out and having a larger influx of hydrocarbons into the well.

The unambiguous conservative nature of these risk management statements in Transocean's current operational guidance, policies, and procedures encompass components of many of the "Nine Characteristics of a Strong Safety Culture" noted by BSEE in 2013.¹⁹ First, Transocean's explicit placement of greater importance on the safety of operations and the rig than on the timely performance of work demonstrates the value that senior management places on

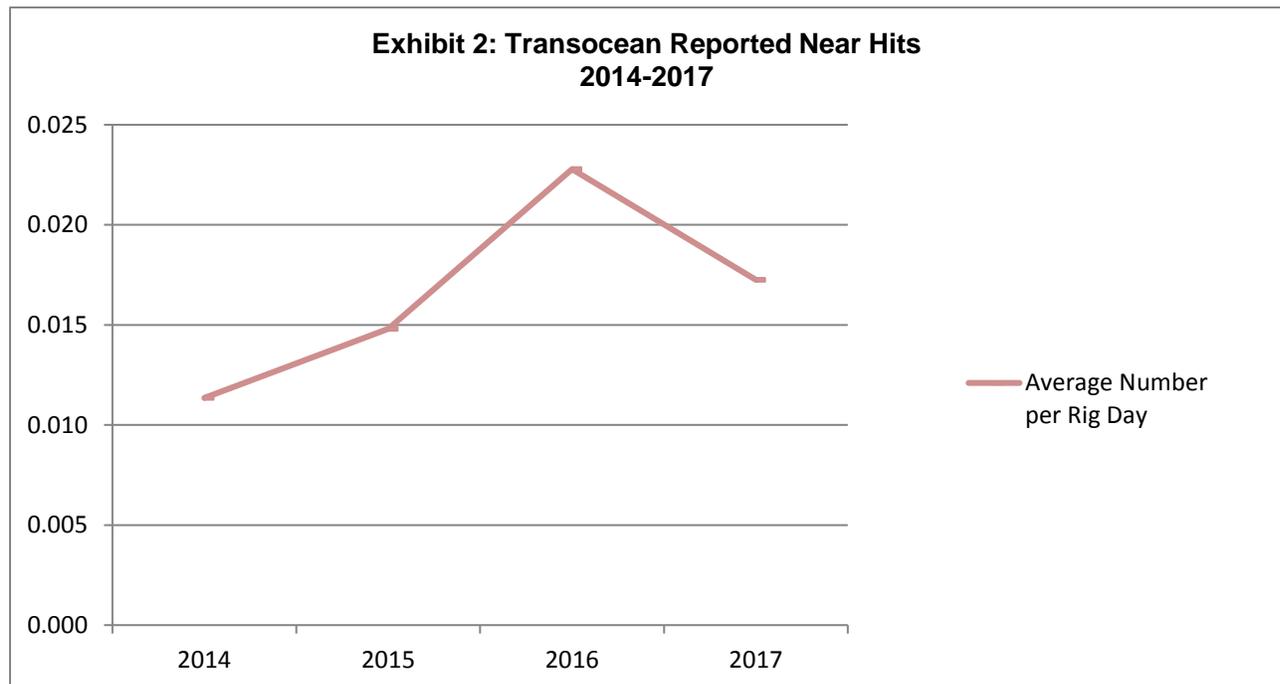
¹⁷ Schein, E. H. 2010. *Organizational Culture and Leadership* (4th Ed.). John Wiley, Hoboken, New Jersey. Organizational cultures are different across subgroups with organizations such as by profession (i.e., engineers, mariners) or departments (i.e., drilling, deck, subsea).

¹⁸ See Transocean "Well Control Handbook, Issue 05, HQS-OPS-HB-01 Revision 02, April 23, 2018.

¹⁹ See <https://www.bsee.gov/newsroom/latest-news/statements-and-releases/press-releases/bsee-announces-final-safety-culture>

maintaining safe operations. Second, the statements are respectful of the complex environment surrounding many tasks and act to empower personnel to operate safely at all times. Third, these types of statements act to further empower employees to stop work in all cases where they believe there is a significant risk or danger and raise or report safety incidents and concerns without fear of retaliation.

The progress in developing a strong safety culture appears to be reflected in the increase in Transocean’s reporting of Near Hit safety incidents on drilling rigs from 2014 through 2017. As shown in Exhibit 2 below, the relative number of Near Hit incidents reported on Transocean drilling rigs more than doubled from 2014 to 2016.



Note: The number of rig days per year used to standardize the Transocean reported annual Near Hit events was based on Transocean “Rig Tracking Status” reports submitted to the US.

The large increase in reported Near Hits occurred at the same time numerous improvements in Transocean’s safety policies and programs were being implemented. In the IA’s opinion, this increase was most likely related to the enhanced Transocean safety culture that was being developed and taking hold with employees. As discussed above, senior management’s extensive support and communication of the TOFS and SWA policy further empowered employees to report safety incidents and concerns without fear of retaliation.

In 2017, a decrease in the number of Near Hit events occurred. As discussed above, by 2017 Transocean had implemented a number of initiatives to reduce dropped objects, line of fire events, and other personal safety incidents. In addition, the implementation of numerous improvements in Transocean’s safety policies and programs were being completed in 2015 and 2016. Finally, enhanced employee training and competency requirements had been completed multiple times by employees by 2017.

Therefore, in the IA's opinion, the 2017 reduction in reported Near Miss events most likely results from improved overall safety performance by Transocean, rather than underreporting. Again, this finding supports the conclusion that an improved and stronger safety culture had been established at Transocean by 2017.

6.2 DRILLING OPERATIONS AUDIT-REVIEW-AND-CLOSEOUT PROCESS

Paragraph 15.a.1 of the Consent Decree required Transocean to develop and maintain an "Audit-Review-and-Closeout Process" that: (1) ensures the follow-up and close-out of rig audit findings and, (2) any "material deficiencies" identified during an audit related to a rig's Major Accidents and Hazard Risk Assessment (MAHRA) are reported to the US and corrected within 60 days, unless an extension is provided. Prior to the issuance of the Consent Decree Transocean already had an established Management System (MS) audit program. This audit program also included a review and close-out process designed to comply with International Safety Management (ISM) and customer requirements.²⁰

In addition, the existing MS audit program appeared to generally meet the BSEE SEMS requirements specified in 30 CFR Part 250.1920 that referenced API RP 75 Section 12.^{21,22} As a result, Transocean's existing MS audit program would have met the Consent Decree requirements in 2013. However, the US Chemical Safety and Hazard Investigation Board (US CSB) and many other experts recognize the need for a "separate and unique focus on process safety" over and above any focus on personnel safety to control low probability but high consequence accidents.²³

As further described by the US CSB:

"Barriers intended to prevent a Macondo-like accident require a different approach and go beyond the basic barrier definition, which covers a physical barrier to prevent the flow of hydrocarbons in a well."²⁴

²⁰ The ISM Code provides an international standard for the safe management and operation of ships and for pollution prevention that flag states require ships to meet. The Code establishes safety-management objectives and requires a safety management system (SMS) to be established by companies operating ships at sea. See <http://www.imo.org/en/OurWork/HumanElement/SafetyManagement/Pages/ISMCode.aspx>

²¹ Federal Register /Vol. 75, No. 199 / Friday, October 15, 2010 /Rules and Regulations, p 63653

²² API RP 75 Section 12.2 Scope includes determining if the management program elements are in place, incorporate the required components, and conducting a review of records regarding the effectiveness of the management program not auditing the effectiveness and performance of underlying controls.

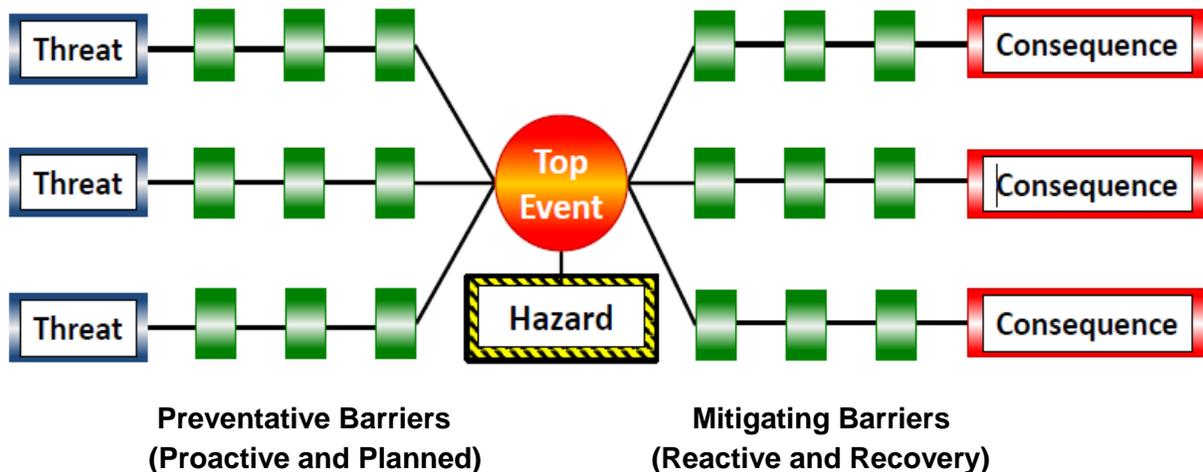
²³ National Academies of Sciences, Engineering, and Medicine. 2018. *The Human Factors of Process Safety and Worker Empowerment in the Offshore Oil Industry: Proceedings of a Workshop*. Washington, DC: The National Academies Press. p 30.

²⁴ US Chemical Safety and Hazard Investigation Board, *Macondo Investigation Report, Volume 2*, June 5, 2014, p. 47. Available at: http://www.csb.gov/assets/1/7/vol_2_final_version.pdf

A traditional ISM and MS audit, as conducted by Transocean in 2013 and earlier, would not meet this comprehensive barrier review and evaluation objective. As a result, to maximize the value and elevate the performance of the MS audit program, Transocean implemented significant revisions so that the audit program would become a risk-based program in 2014. The revised and updated MS audit program was designed to specifically incorporate the review and evaluation of a rig’s Major Accident and Hazard Risk Assessment (MAHRA) barriers and mitigation controls during internal audits of a rig’s drilling operations.

A MAHRA describes how Transocean “risk assesses and manages the major hazards that have the potential to affect its operations” on individual drilling rigs.²⁵ The preparation of a MAHRA is a detailed and structured process that identifies, categorizes, and then characterizes potential major accidents and hazards including the preventative barriers to the major accident or hazard “trigger event” occurring and the mitigating barriers to the major adverse consequence occurring from the event. Transocean’s MAHRAs incorporate the Bowtie Barrier Analysis methodology to risk assessment as shown in Figure 1.

Figure 1: General Risk Bow-Tie Model



Bowtie Barrier Analysis diagrams provide an excellent visual tool to demonstrate the critical connection between specific risk controls and the management system and safety critical systems (SCSs) required for assuring ongoing effectiveness.²⁶ As shown in Figure 1, there are two types of barriers, preventative and mitigating. Preventative barriers are designed to stop a specific risk or “threat” from occurring and resulting in Top Event such as a well blowout. These barriers are proactive measures. Mitigating barriers are controls designed to stop the escalation of the Top Event (i.e., well blowout) to reduce the adverse impact of the hazard such as a rig explosion resulting in fire and multiple fatalities from occurring.

²⁵ Deepwater Invictus Major Accident Hazard Risk Assessment, March 07, 2014 America’s Business Unit – Gulf of Mexico, 15.a.1(CD) MAHRA (DVS) 03.07.14 (redacted), available at: <https://www.deepwater.com/>

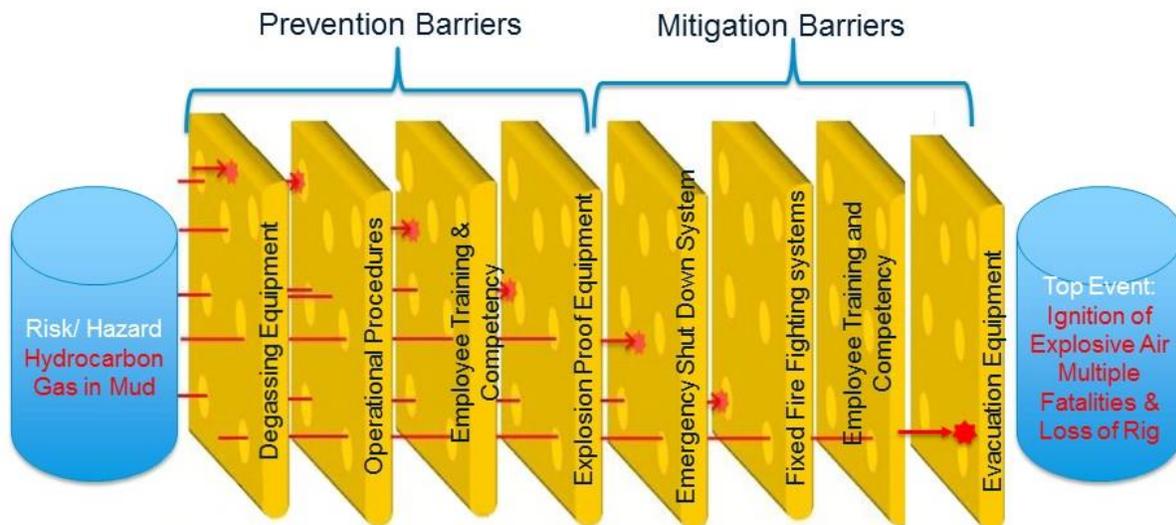
²⁶ Ibid.

By directly incorporating into the MS audit process the rig MAHRA's and then focusing the auditing activities on a review and evaluation of the barriers and mitigation controls Transocean: (1) clearly communicated to all personnel the importance of process safety in the management system; and (2) created a mechanism for obtaining leading indicators for evaluating process safety (also called Operational Integrity) aspects on the rigs that previously were not available.

One of the major findings of the US CSB investigation of the Deepwater Horizon explosion and fire notes that imbalanced company indicator programs that focus primarily on personnel safety and not process safety will not “inform a company of its emerging major accident risk.”²⁷ Transocean’s decision to perform MS audits using a MAHRA-based approach at least partially addresses this key finding. In contrast, US CSB found that BSEE offshore regulations, including the requirement for SEMS audits, do not “complete assurance and verification activities to affirm SEMS and the barriers relied upon are appropriate, available, and effective throughout the lifecycle of safety-critical operations.”²⁸

Transocean’s revised MS audit approach uses the MAHRA established risk-based criteria for focusing the audit sampling activities to specific barriers that are evaluated as part of an audit. The sampling activities are designed to find potential “holes” in the barriers consistent with the swiss cheese theory of major accident causes that dates back to James Reason and others in the 1990s and early 2000s.²⁹ This theory is shown in Figure 2 below.

Figure 2: Swiss Cheese Barrier Risk Model



Note: the Prevention Barriers and Mitigation Barriers included in Figure 2 are representative but only a subset of Transocean’s actual barriers

²⁷ US Chemical Safety and Hazard Investigation Board, *Macondo Investigation Report, Executive Summary*, April 12, 2016, p. 15. http://www.csb.gov/assets/1/7/vol_2_final_version.pdf

²⁸ *Ibid.*, p. 19.

²⁹ Reason, J., *Human Error*, Cambridge University Press, 1990 and Reason, J., *Human error: models and management*. BMJ, 320.7237. p: 768-770. 2000

Holes in the barriers occur when “active” deficiencies such as unsafe behaviors or “latent” deficiencies such as embedded failures in employee training and competency. Therefore, auditing to confirm the integrity of one or more barriers is relatively straightforward. For example, drill crew competency is one key barrier to a number of Top Events related to well operations. One important way to improve this competency is for the crews to hold training “drills” while on the rig for various emergency scenarios such as taking a kick during drilling or tripping out of the hole.

In addition, holding dedicated departmental safety meetings to discuss important risk management topics is another method to improve personnel competency. Formal departmental meetings also reinforce a safety culture focused not just on personal safety but also process safety with discussions of Transocean “Quick Shares” and “Operational Alerts” related to drilling (or other) incidents on other rigs.

The performance of both of these activities consistent with specific requirements is mandated by Transocean policies and procedures. Transocean’s management system is also designed to manage and track the performance of these activities. Therefore, using the MS audit process to determine whether the quality and performance of these drills and department safety meetings meet Transocean’s requirements would be a typical auditing task when evaluating barriers related to well operations. If an individual rig or multiple rigs have non-compliance findings concerning these requirements, these findings are a leading indicator that the key drill crew competency barrier may be weak or compromised.

This major change to a system safety barrier approach in the MS audit program demonstrates that Transocean is a learning organization as evidenced by being willing to change when the need is indicated by relevant information. The MAHRA-based MS audits also reinforce the company’s senior management commitment and expectation that major accident and hazard barriers be actively maintained and verified to enhance operation integrity. Again, these are characteristics of the continued evolution of a strong safety culture at Transocean.³⁰

As discussed in the Independent Auditor’s CY 2017 Annual Report, Transocean’s MS audit policy and procedures issued in 2014 contained a gap in the review and follow-up on audit findings related to operational integrity aspects of rig operations. This gap was based on the audit finding classification system including a narrow definition of a “Non-Compliance” finding. As a result, deficiencies and failures in compliance with Transocean policies, procedures, and requirements that reduced the effectiveness of MAHRA barriers related to operational integrity were often classified as “Audit Observations.”

Audit Observations also were not subject to the same level of follow-up and confirmation on corrective actions as Non-Compliance findings for personal safety issues. Furthermore, in the opinion of the Independent Auditor, failing to classify operational integrity related findings as

³⁰ See “*Deepwater Horizon Study Group, Investigation of the Macondo Well Blowout Disaster*” by the Center for Catastrophic Risk Management (CCRM) at the University of California at Berkley, March 1, 2011, pp 78-79.

Non-compliances had the appearance of ranking deficiencies in barriers for personal safety higher than deficiencies in barriers related to process safety.

Based on these observations, Transocean implemented improvements in the MAHRA-Based MS audit process in 2016. These included requiring all Audit Observations to be entered into FOCUS for Master/OIMs to develop corrective actions and to ensure the onshore management tracking of the close-out of the Audit Observations. However, Transocean continued the classification of deficiencies related to personal safety findings as non-compliances while process safety findings were classified as Audit Observations.

This MS audit approach was especially concerning when multiple Audit Observations for the same rig operation (i.e., station keeping, drilling operations) were identified in an MS audit. Transocean's MS auditors also completed the classification of all MS audit findings while still on the rig at the close-out meeting. As a result, the audit program manager and any subject matter expert's (SME's) input on the impact of multiple Audit Observations on a MAHRA barrier and operational integrity aspects of a rig's operations was very limited.

Again, based on these Independent Auditor observations, Transocean implemented a second informal change and improvement in the MS audit process in mid-2017. This change was that final classification of the audit findings would be completed onshore during final report preparation. As a result, there was additional time for SME and onshore management review of the audit findings for classification. In the IA's opinion, this improvement contributed to Transocean's issuance of the first MS audit "Major Non-Compliance" finding for a rig operating in US waters in late 2017. This Major Non-Compliance finding was reported based on the recognition that multiple individual deviation findings all related back to deficiencies in the operational integrity of a single MAHRA barrier and control.

As discussed in Section 4.1, Transocean took the final steps to improve the MS audit program and cement the process for including process safety as a key component of the program with the updated MS Audit Policy that was issued in February 2018. The enhanced senior management commitment to the MS audit program and internal empowerment of the program was further demonstrated by the reporting of Major Non-Compliance findings for two rigs operating in US water in 2018. These Major Non-Compliance findings were also based on the recognition that multiple individual deviation findings that related back to a single MAHRA barrier and control indicated a potential systemic deficiency.

As Mr. Bill Hoyle, the retired senior investigator with the US CSB team that investigated the Deepwater Horizon accident stated at the Human Factors of Process Safety and Worker Empowerment in the Offshore Oil Industry that when audit reports say everything is fine, "that's a bad report."³¹ In fact, according to Mr. Hoyle and many other experts including the

³¹ National Academies of Sciences, Engineering, and Medicine. 2018. *The Human Factors of Process Safety and Worker Empowerment in the Offshore Oil Industry: Proceedings of a Workshop*. Washington, DC: The National Academies Press. p 54.

Independent Auditor, negative audit findings are a “good thing” as these types of findings provide valuable feedback to the management and safety systems. Furthermore, a strong safety culture requires that this information is pushed up to the leaders of the company. This is exactly the required MS audit reporting structure at Transocean.

As provided in the company’s 2018 MS Audit Policy, the following senior management personnel receive copies of final MS audit reports:

- President and Chief Executive Officer
- Executive Vice President, Chief Operating Officer
- Executive Vice President, Chief Administrative & Information Officer
- Vice President, Audit and Advisory Services
- Senior Vice President Operations
- Managing Director, Operations Assurance
- Vice President, HSE & Engineering
- Director, Operations Integrity and HSE Support
- Operations Director (responsible for the geographic location)
- Unit/Hub HSE Lead

Transocean’s continued readiness to issue MS audit Major Non-Compliance findings to rigs based on multiple interrelated deficiencies and the reporting of these important findings to senior leadership indicates that “system safety” is now clearly embedded within the operational culture of Transocean.

7.0 CONCLUSIONS

Based on the Independent Auditor's review and audit, Transocean was in full compliance with the Consent Decree and Performance Plan during the CY 2018 review time period. This compliance included implementation and performance of the risk management provisions and programs for drilling operations required by the Consent Decree. In addition, Transocean's internal management system continues to comply with the BSEE SEMS requirements in 30 CFR Part 250, Subpart S.

In accordance with Paragraph 22 of the Performance Plan, Transocean is to respond to any "deficiencies" noted in the Independent Auditor's report and develop a corrective action plan within 30 days of receipt of the draft report. As discussed above, no compliance deficiencies were noted by the Independent Auditor for the CY 2018 review time period. Therefore, Transocean is not subject to the submission of a corrective action plan for inclusion in this 2018 report that is to be submitted to the US.

Finally, in the IA's opinion, over the past five years, Transocean has undertaken many important organizational changes and implemented numerous new and improved policies, procedures, and programs to materially improve the personnel safety and operational integrity of the company's offshore drilling operations. Based on these findings, Transocean has put in place many important sustainable measures to prevent the recurrence of an offshore drilling accident of the nature and magnitude of the Deepwater Horizon explosion and Macondo Well oil spill that occurred in the Gulf of Mexico.

Transocean's specific improvements and sustainable measures, many of which are rooted in Consent Decree obligations, can also be used model for the offshore drilling industry to further improve the risk management and operational integrity of their operations. Many of these improvements and sustainable measures also exceed current US regulatory requirements.

The potential does exist for backsliding at Transocean and for reduced levels of effort to control process safety and operational integrity risks at other offshore drilling contractors working in US waters. Therefore, Transocean and the offshore oil and gas sector must as a whole embrace a strong culture of system safety and operational integrity as an important competitive advantage. This appears to have occurred at Transocean. As a result, the value of becoming an HRO at the company is recognized in both business planning and operational budgets.

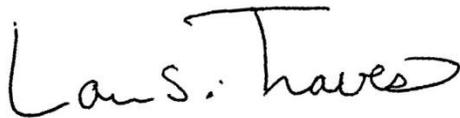
8.0 CERTIFICATION

The undersigned hereby certifies that:

The reported analyses, opinions, findings, and conclusions contained within this report are personal, unbiased, professional, and limited only by the assumptions and qualifications stated herein. Compensation was not contingent upon an action or an event resulting from the analyses, opinions, findings, or conclusions in, or the use of, this report. This project was performed in accordance with accepted practices prevailing in the health, safety, environmental, and quality (HSEQ) auditing and consulting industries.

The Independent Auditor, Mr. Traves, has more than 25 years of HSEQ experience, including acting as the Lead Auditor on SEMS and HSEQ compliance audits. He has conducted comprehensive SEMS, HSEQ compliance, and HSE system audit projects for more than 100 operations located both onshore and offshore throughout North America.

Prepared by:



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Labyrinth Management Group, Inc.*

APPENDIX A

Summary of the Consent Decree and Performance Plan Requirements Articles VI and VIII

Appendix A
Summary of the Consent Decree Performance Plan Requirements – Articles VI & VIII*

Paragraph Reference	Topic	General Requirements
15.a.1.a	Drilling Operations - Audits	Do not conduct any Drilling Operations unless the Company designs, implements, and maintains an Audit-Review-and-Closeout Process overseen by Transocean's onshore management that: i. Ensures the follow up and closeout of rig-specific audits; and ii. Ensures that all material deficiencies related to rig's Major Accidents and Hazard Risk Assessment ("MAHRA") identified in an audit are corrected within sixty days of identification, unless Transocean's supervising auditor or manager agrees in writing to a longer time period
15a.1.b	Drilling Operations - SEMS	Develop a Management System which complies with Operators' Safety and Environmental Management System ("SEMS") for owned or operated rigs, vessels, and facilities operating in the Waters of the United States. Certify that a Management System is in place that complies with SEMs.
15.a.2	Stop Work Authority (SWA)	Do not conduct any Drilling Operations unless the Company establishes a Stop-Work Authority procedure that: i. Is consistent with International Safety Management ("ISM") code, SEMS, and federal regulatory requirements; and ii. Grants all personnel and contractors the responsibility and authority, without fear of reprisal, to stop work on Transocean's rigs, vessels, or facilities, or decline to perform an assigned task when such person perceives any significant risk or danger exists (including but not limited to: loss of well control, spill, blowout, and/or loss of life).
15.b	BOP Certification	Do not conduct any Drilling Operations unless the Company provides to the United States prior to the time of the initial deployment of the BOP on a well operation, written certification that: i. Scheduled preventive maintenance provided by API Standard 53 for the BOP to be utilized has been performed; ii. All repairs done to the BOP utilized only Original Equipment Manufacturer ("OEM") parts, unless the OEM cannot supply the necessary part, and were completed by Competent Personnel as defined in the Consent Decree. iii. All batteries used in the BOP emergency control systems (including, e.g., deadman, autoshear) have been maintained according to the OEM recommendations; and iv. The blind shear rams were surface tested in accordance with OEM specifications and regulatory requirements.

Appendix A

Summary of the Consent Decree Performance Plan Requirements – Articles VI & VIII*

15.d.1 & 15.d.2	Well Control Competency Assessments	<p>Develop, implement, and maintain documentation for a Well Control Competency Assessment plan for all Transocean personnel (including: Offshore Installation Manager (“OIM”), Senior Toolpusher, Toolpusher, and Driller) responsible for conducting or oversight of Drilling Operations on Transocean’s owned, operated, or contracted rigs (collectively “Well Control Personnel”) that:</p> <ul style="list-style-type: none"> i. Includes well control competency requirements for Well Control Personnel that exceed the competency requirements set forth in 30 C.F.R. §§ 250.1500-1510 (Subpart O); ii. Identifies skill sets and other competencies needed to recognize, evaluate, and respond to Well Control events; iii. Provides for the training and assessment of skills and competencies necessary for those events; and iv. Provides appropriate corrective actions for personnel who do not demonstrate the identified skills or competencies, including but not limited to, ensuring that any such personnel who have not demonstrated such skills and competencies shall work under direct
15.d.3	Training	<p>Require all offshore management who conduct or oversee Drilling Operations, specifically the OIM, Senior Toolpusher, Toolpusher and Driller (collectively, “Designated Employees”) to complete at least forty (40) hours of training each calendar year related to:</p> <ul style="list-style-type: none"> i. Outer Continental Shelf (“OCS”) well control operations; ii. Principles of process safety; or iii. Risk Management.
15.d.5	CAMS	<p>Implement and maintain a Competence Assessment Management System (“CAMS”) to develop standards of competence required across Transocean’s United States fleet for Drillers, Senior Subsea Supervisors, Subsea Supervisors, and Dynamic Positioning Officers (collectively, “CAMS Employees”) and to ensure that those job positions are receiving the correct training for their positions. The CAMS process shall:</p> <ul style="list-style-type: none"> i. Obtain third-party certification of its CAMS process from the Offshore Petroleum Industry Training Organization (“OPITO”); ii. Assess risks associated with CAMS Employees; and iii. Audit training and employee competency records to assure that CAMS Employees are adequately receiving the correct training for their positions.

Appendix A

Summary of the Consent Decree Performance Plan Requirements – Articles VI & VIII*

15.d.6	Competence Assessment Program	<p>Use a Competence Assessment Program (“CAP”) to assess the capability of Drillers, Senior Subsea Supervisors, Subsea Supervisors, and Dynamic Positioning Officers (collectively, “CAP Employees”) to operate at the CAMS established levels of competence. The CAP shall:</p> <ul style="list-style-type: none"> i. Establish a single standard of competency in each job; ii. Be reviewed semi-annually to identify any potential gaps in on-the-job training and/or classroom training programs; and iii. Be updated, changed, or supplemented at least once each calendar year.
15.d.7 & 15.d.8	Operational Alerts	<p>Develop and commence continuous operation of the Global Management System (“GMS”) to forward operational alerts issued at the corporate level to Transocean’s rigs operating in the Waters of the United States.</p> <p>Require confirmation from the Offshore Installation Managers (“OIMs”) that operational alerts have been received and that the required actions are being taken.</p>
15.f.	Records	<p>Maintain both offshore and onshore copies of all records related to the United States-required drilling and production tests of drilling equipment owned by Transocean.</p> <p>Submit the records to the United States upon request.</p>
15.g	Incident Tracking Report	<p>Annually prepare an Incident Tracking Summary Report documenting all corrective maintenance and inhibits (i.e., the temporary disabling) of safety critical designated equipment, stop-work events, near hits and serious near hit incidents, major loss of containment incidents, and any incidents involving Transocean’s employees or contractors that Operators are required to report under 30 C.F.R. § 250.188 (as modified to include reporting of property or equipment damage greater than \$250,000 in value). The Incident Tracking Report shall include trend analysis for the categories of incidents listed above.</p>
16.a,b	Oil Spill Training	<p>Provide training at least once per calendar year on the National Incident Command System (“ICS”) to Transocean’s personnel engaged in any function associated with emergency planning, preparedness, and response for any drilling rigs.</p> <p>This training requirement applies to the following personnel: Health, Safety, and Environment (“HSE”) Vice President (now titled Vice President of HSE), Vice President of the Americas, HSE Director (now split into Director HSE Field Support and Director HSE Services), HSE Manager, Sector Manager and General Manager (now titled Operations Director), Operations Managers, and Rig Managers (collectively, the “Emergency Response Team” or “ERT”).</p>

Appendix A

Summary of the Consent Decree Performance Plan Requirements – Articles VI & VIII*

17.b	Oil Spill Drills - Actual Notification	<p>Quarterly, by the last day of March, June, September, and December of each calendar year, with advance notice, and in coordination with the Operator, conduct one drill with actual notification to the National Response Center clearly identifying that the call is part of an exercise.</p> <p>b. The rig to perform the actual notification drill shall be selected at random by a Transocean Operations Director in the first week of each quarter.</p> <p>c. Transocean shall document the actual notifications in the drill records of the rig and make available those documents to the United States upon request.</p>
17.d	Weekly Emergency Response Drills	<p>Participate with Operator personnel in weekly rig-based Emergency Response Drills, which shall include the following types of scenarios: blowouts, gas on the surface, fire, vessel collisions, terrorist threats, and muster and evacuation. Where appropriate, Emergency Response Drills shall also include drills regarding the applicable OSRP for a particular scenario.</p> <p>Document the Emergency Response Drills in the drill records of the rig and make available those records to the United States upon request.</p>
18	Oil Spill Response Plan	<p>Submit to the United States, for review and approval, an addendum to the approved OSRP for each Operator with which it contracts. The addendum shall include the following:</p> <ul style="list-style-type: none"> i. A listing of all oil spill response equipment stored on each rig; ii. Information on the communication systems and compatibility with the Operator's systems, including those in the approved OSRP; iii. A listing of Transocean employee positions responsible for assisting with an oil spill response pursuant to the OSRP, a description of those positions and duties, and a summary demonstrating that the employees filling the positions have the training or experience related to such positions and/or are engaged in a training program or on-the-job-training related to such positions. Transocean shall provide to the United States the names of employees filling the positions upon request; and iv. Action plans and duties relating to maintaining or regaining well control.
18	Oil Spill Response Plan	<p>Review and update its addendum to the Operator's OSRP, if appropriate, based on any change to the Operator's OSRP.</p> <p>The approved addendum, along with any updates based on changes to the Operator's OSRP, shall be made part of the rig Emergency Response Plan ("ERP").</p>

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Summary of the Consent Decree Performance Plan Requirements – Articles VI & VIII*

19.b	Alarm System Safety	<p>Maintain current status records or fire/gas alarm inhibits on Rig & Onshore</p> <p>a. Maintain within maintenance system records an up-to-date status of all inhibits made to the fire and gas alarm systems of its rigs operating in the Waters of the United States.</p> <p>b. Record and maintain this information both on the rig and in a Transocean on-shore database located in the United States. This information shall be made available to the United States upon request.</p>
20	Innovation	<p>Transocean shall form a Technology Innovation Group (TIG) to focus on drilling safety and explore and develop next generation solutions to critical aspects of drilling. A minimum of \$10 million will be devoted to this effort. An annual report will be prepared for TIG efforts.</p>
21.a.	HSE Committee	<p>c. The HSE Committee shall be responsible for the Company’s reporting obligations under Paragraph 31.b. of the Consent Decree as follows:</p> <p>i. The HSE Committee shall meet at least quarterly.</p> <p>ii. The HSE Committee shall appoint a Compliance Advisor to prepare quarterly compliance reports regarding the status of Transocean’s compliance with each element of the Consent Decree (“Quarterly Compliance Report”). The Quarterly Compliance Report shall include discussion of, but not be limited to, all steps taken to comply, all problems or challenges encountered in attempting to comply, and any assistance needed from Transocean Ltd.’s Boards of Directors to help secure timely compliance of the Consent Decree.</p> <p>iii. The Quarterly Compliance Reports shall be provided to HSE Committee members prior to each quarterly meeting.</p> <p>iv. Following each quarterly meeting, the HSE Committee shall provide the Quarterly Compliance Report to TODDI’s and Transocean Ltd.’s Boards of Directors.</p>
21.b	Public Web Site	<p>b. To facilitate access to the Public Web Site, Transocean shall create a link to a “United States MACONDO Settlement Compliance Webpage” on Transocean’s web site, www.deepwater.com.</p>
21.c	National Resource Inventory	<p>a. For each calendar year after February 19, 2013, by April 2, provide to the USCG (via the National Strike Force Coordination Center), for entry into the National Response Resource Inventory database, a list of all Well Control and spill response equipment Transocean owns, operates, or for which it has contracted.</p>

Appendix A

Summary of the Consent Decree Performance Plan Requirements – Articles VI & VIII*

22	Independent Consent Decree Auditor	As part of its Performance Plan approved by the United States, retain an Independent Consent Decree Compliance Auditor who shall audit and report to the United States on Transocean's compliance with Articles VI ("Measures to Improve Performance and Prevent Recurrence") and VIII ("Reporting") of the Consent Decree.
23	HSE Committee	<p>TODDI shall form an HSE Committee. The HSE Committee shall fulfill the requirements of both Paragraph 21.a. and 23.a. of the Consent Decree.</p> <p>b. The HSE Committee shall evaluate Transocean's response/improvements in Transocean's safety and operational risk identification and management of risk, including Transocean's compliance with the process safety related aspects of the Consent Decree, specifically BOP testing and maintenance, training, and Well Control.</p> <p>The HSE Committee shall meet at least quarterly.</p> <p>Following each quarterly meeting, the HSE Committee shall report its findings and recommendations to TODDI's and Transocean Ltd.'s Boards of Directors</p>
23	Independent Process Safety Consultant	Retain an Independent Process Safety Consultant to review TO's BOP testing and Maintenance, Training, and Well Control
31.a	Consent Decree Annual Report	<p>For each calendar year after the Date of Entry, by April 2 of the following year, describe all measures taken to comply with each of the requirements of Article VI (Measures to Improve Performance and Prevent Recurrence) in a report.</p> <p>Post the annual report on the Company's public website.</p>
31.b	Quarterly Reports to Transocean Board of Directors	For each calendar year after the Date of Entry, beginning after the first full quarter following the Date of Entry, report in detail at least quarterly to the Board of Directors of Transocean Ltd. on the status (in each report for the most recently completed quarter) of the Company's compliance with each element of this Consent Decree.

Appendix A

Summary of the Consent Decree Performance Plan Requirements – Articles VI & VIII*

32	Report Incidents of Non-Compliance	In any report required by Article VIII (Reporting), the Transocean Defendants must describe any non-compliance with the requirements of this Consent Decree and provide an explanation of the likely cause and the remedial steps taken, or to be taken, to prevent or minimize such non-compliance. If any of the Transocean Defendants violates any requirement of this Consent Decree, the Transocean Defendants shall report to the United States such violation and its likely duration, in writing, within ten (10) business Days of the Day that any Sector Manager of Transocean Defendants (identified in the Performance Plan) first becomes aware of the violation, with an explanation of the violation's likely cause and of the remedial steps taken, or to be taken, to prevent or minimize such violation. If the cause of a violation cannot be fully explained at the time the report is due, the Transocean Defendants shall so state in the report. The Transocean Defendants shall investigate the cause of the violation and shall then submit an amendment to the report, including a full explanation of the cause of the violation, within thirty (30) Days of the Day any of the Sector Managers of Transocean Defendants (identified in the Performance Plan) becomes aware of the cause of the violation. Nothing in this Paragraph or the following Paragraph relieves the Transocean Defendants of their obligation to provide the notice required by Article X (Force Majeure) or their liability for stipulated penalties as set forth in Article IX (Stipulated Penalties).
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*The summary of Consent Decree Performance Plan Requirements provided as Appendix A is not a fully comprehensive list of all applicable requirements.

APPENDIX B

Transocean Response to Independent Consent Decree Compliance Auditor Annual Report for 2018



APPENDIX B

TRANSOCEAN RESPONSE TO INDEPENDENT CONSENT DECREE COMPLIANCE AUDITOR ANNUAL REPORT FOR 2018

[PREPARED BY TRANSOCEAN]

Under Paragraph 22 of the Consent Decree, dated February 19, 2013 (“Consent Decree”), entered into between certain affiliates of Transocean (“Transocean”) and various United States government agencies (“United States”) and the related Performance Plan approved by the United States on January 2, 2014 (“Performance Plan”), Transocean provided a “Response” to the Independent Consent Decree Compliance Auditor Annual Reports (“IA Reports”).

As required, the Responses addressed any deficiencies noted in the IA Reports, along with a summary of actions taken or to be taken to address such deficiencies. Additionally, although not required under the Consent Decree or Performance Plan, the Responses provided comments to any observations identified in the IA Reports. For the 2018 review period, there were no Consent Decree non-compliances or observations identified or reported. In addition, the Independent Consent Decree Auditor (Independent Auditor) notes in the 2018 IA Report that the 2017 material observations have been fully addressed and followed-up on by Transocean and the Independent Auditor. The Independent Auditor further noted that completion of additional follow-up actions for these observations is not required, therefore, none are included in this Response.

Transocean remains fully committed to complete compliance with all aspects of the Consent Decree and Performance Plan. Transocean and the Obligations Team communicated extensively with the Independent Auditor and United States representatives throughout the year and received a significant amount of feedback and questions. In all cases, Transocean responded promptly and with full transparency, understanding that all parties, including the Independent Auditor, the United States and Transocean, are focused on the same thing - safe and environmentally sound operations without any incidents.