



# ENVIRONMENTAL STATEMENT

2021



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## Acronyms

<b>3D</b>	three-dimensional
<b>ALARP</b>	As Low as Reasonably Practicable
<b>BEIS</b>	Department for Business, Energy and Industrial Strategy
<b>boe/d</b>	barrels of oil equivalent (barrels of oil, condensate and LPG plus the heating equivalent of gas converted into barrels at the appropriate rate) produced per day
<b>BKR</b>	Bruce, Keith and Rhum
<b>CEFAS</b>	Centre for Environment, Fisheries and Aquaculture
<b>CH<sub>4</sub></b>	Methane
<b>CNS</b>	Central North Sea
<b>CO</b>	Carbon Monoxide
<b>CO<sub>2</sub></b>	Carbon Dioxide
<b>EEMS</b>	Environmental and Emissions Monitoring System
<b>EMS</b>	Environmental Management System
<b>ERG</b>	Emissions Reduction Group
<b>ES</b>	Environmental Statement
<b>GHG</b>	Greenhouse Gas
<b>HP</b>	High Pressure
<b>HPHT</b>	High Pressure High Temperature
<b>HQ</b>	Hazard Quotient
<b>HSE</b>	Health, Safety and Environmental
<b>HSEQ</b>	Health, Safety, Environment & Quality
<b>KPIs</b>	Key Performance Indicators
<b>LP</b>	Low Pressure
<b>mg/l</b>	milligrams per litre
<b>mmboe</b>	million barrels of oil equivalent
<b>NCR</b>	Non-compliance report
<b>NNS</b>	Northern North Sea
<b>NO<sub>x</sub></b>	Nitrogen Oxides
<b>NSTD</b>	North Sea Transition Deal
<b>OCGT</b>	Open- Cycle Gas Turbines
<b>OCNS</b>	Offshore Chemical Notification Scheme
<b>OCR</b>	Offshore Chemicals Regulations
<b>OiPW</b>	Oil in Produced Water
<b>OMS</b>	Operations Management System
<b>OPPC</b>	Oil Pollution Prevention & Control
<b>OPRED</b>	Offshore Petroleum Regulator for Environment and Decommissioning
<b>PON</b>	Petroleum Operations Notification
<b>PWRI</b>	Produced Water Re-injection
<b>SEUK</b>	Serica Energy (UK) Limited
<b>SO<sub>2</sub></b>	Sulphur Dioxide
<b>SSIV</b>	Subsea Isolation Valves
<b>SUB</b>	Substitution
<b>UKCS</b>	United Kingdom Continental Shelf
<b>VOC</b>	Volatile Organic Compound
<b>WAD</b>	Western Area Development
<b>WEEE</b>	Waste, Electrical & Electronic Equipment

## Letter from the Chief Executive Officer

**"Our highly experienced leadership and Board remain committed to putting stewardship of the environment in which we operate at the forefront of our business."**

In 2021, Serica Energy (UK) Limited (SEUK) increased its baseline production from Bruce, Keith and Rhum (BKR) following the successful conclusion of the Rhum 3 (R3) well intervention project. This additional production reduced the carbon intensity of the Company's overall hydrocarbon output and provided vital gas to the UK market at a time of increased concerns around national security of supply. The positive result at R3 was followed later in the year by the successful commissioning of the Columbus single well gas condensate development in the Central North Sea (CNS), again adding vital production to the UK domestic market. The success of both the R3 and Columbus projects validated the bold decision made by the Company in 2020 to continue investing in the fundamentals of the business, despite record low commodity prices and the uncertainty associated with the Covid pandemic.

Our highly experienced leadership and Board remain committed to putting stewardship of the environment in which we operate at the forefront of our business. 2021 has seen further development of the Company's Environmental Social and Governance (ESG) commitments, and the efforts of our internal ESG working groups have led to SEUK becoming an even more diverse, inclusive, and responsible organisation. The work of our Emissions Reduction Group (ERG) has also been noteworthy, with further reductions in the carbon intensity of our produced hydrocarbons achieved in 2021 and some ambitious plans to reduce emissions moving into 2022 and beyond. The implementation and growth of the ESG Champions Group offshore has allowed the offshore workforce to have a greater influence on our company ESG performance, and our most effective and successful emissions reduction projects have originated from this group. Much like Health and Safety, ESG has now become "everybody's business" and this is being achieved while maintaining our unwavering focus on health and safety performance, and production, where our 2021 results speak for themselves.



In accordance with OSPAR's Convention for the Protection of the Marine Environment of the Northeast Atlantic, this annual statement focuses on our operations on the UK Continental Shelf (UKCS), providing an overview of all the environmental aspects that are of material relevance to us and our stakeholders. The focus of the Environmental Statement (ES) is:

- Atmospheric emissions
- Chemical use and discharge
- Oil discharges to sea and
- Waste

**Mitch Flegg**  
Chief Executive Officer

## Serica's HSEQ Policy



### Our Commitment

Serica is committed to conducting its business activities in a manner that assures the **health, safety and wellbeing** of our staff and contractor personnel whilst also safeguarding the environment within which we operate.

## Principles

Serica's Operations Management System (OMS) provides an integrated and systematic approach to Health, Safety, Environmental and Quality management and demonstrates how we:

- comply with all applicable legislation, industry standards and good practice;
- promote a positive HSEQ culture through visible leadership commitment, personal accountability, communication and engagement with key stakeholders;
- understand our risk profiles and apply a risk management process that reduces this risk to As Low as Reasonably Practicable (ALARP);
- ensure that HSEQ remains integral to the planning, design, construction, operation, maintenance and disposal of our assets;
- promote environmental sustainability and the reduction of our Carbon footprint;
- provide staff with suitable information, instruction and training relevant to their duties and responsibilities;
- maintain emergency response plans and the organisational capability to respond effectively to incidents and emergencies;
- continually improve our HSEQ performance by defining performance objectives, monitoring and measuring results, and completing a programme of audit and assurance activities.

Serica expects everyone involved in our activities to take responsibility and be accountable for compliance with this policy, our OMS, current legislation and all applicable regulatory requirements.

The Chief Executive Officer, supported by the Board of Directors, is accountable for the HSEQ performance of the company and shall ensure that sufficient resources are in place to implement this policy.

A handwritten signature in black ink, appearing to read 'Mitch Flegg', is positioned above the printed name and title.

**Mitch Flegg**  
Chief Executive Officer  
May 2021

## **Serica Energy (UK) Limited**

### **Serica's main focus is on production in the Northern North Sea (NNS), complimented by a portfolio of exploration opportunities**

SEUK is Duty Holder and Operator of the Bruce Platform serving the BKR fields. SEUK is also the "Well Operator" for Columbus as defined by the Offshore Installations (Offshore Safety Directive), (Safety Case etc.) Regulations 2015 (SCR 2015) and the Offshore Petroleum Licensing (Offshore Safety Directive) Regulations 2015.

SEUK prioritises a high level of environmental performance across all operations and sets Key Performance Indicators (KPIs) to both maintain existing high standards and drive continuous improvement. The Environmental KPIs are directly linked to the Company's employee bonus scheme and are aligned with the North Sea Transition Deal (NSTD), the Energy White Paper and the World Bank Zero Flaring Initiative.

### **The Operations Management System (OMS)**

### **The SEUK OMS provides the framework for the management of Health, Safety, Environmental and Quality (HSEQ) across the organisation and is designed to ensure the delivery of safe, environmentally responsible, and reliable operations in accordance with formalised policies, practices, processes, and standards**

The Environmental Management System (EMS), contained within the OMS, covers aspects, such as chemical management, pollution controls and emissions management. The EMS defines how regulatory compliance is achieved and outlines SEUK's corporate expectation to implement best practice above and beyond the requirements of the regulations.

The OMS undergoes frequent reviews and updates are made where necessary to ensure that it remains current in the light of continually changing HSEQ regulations.

The structure and content of the OMS recognises the principles of:

- HSG65 (Managing for health and safety), ISO 45001 (Occupational Health and Safety Management Systems)
- ISO 14001 (Environmental Management Systems) and ensures that risks to Health and Safety of personnel and to the environment are reduced to As Low as Reasonably Practicable (ALARP).

SEUK's EMS was successfully reverified against the requirements of OSPAR 2003/5 in May 2021. Recommendations from the external verification process are recorded in Synergi Life (SEUK's cloud-based HSEQ and risk management system), discussed and implemented where practicable.

## SEUK's North Sea Operations

# OPERATED PRODUCING FIELDS

## The Bruce, Keith and Rhum Fields

The Bruce Platform is located on the United Kingdom's Continental Shelf (UKCS) 148km East of Shetland and 17km West of the UK and Norwegian median line in water depths of 122 meters in the NNS. The Bruce Platform services the BKR Fields.

- The Bruce and adjacent Keith and Western Area Development (WAD) Fields are located in UKCS Blocks 9/8a, 9/9a and 9/9b.
- The Rhum gas field (3/29a) is situated 44km North of the Bruce Platform.

Oil processed through the Bruce Platform is exported via the Forties Pipeline System to Cruden Bay, near Peterhead, and to the Kinneil Terminal in Grangemouth. Gas processed through the Bruce Platform is exported to St Fergus via the Frigg pipeline.

In 2021 the production rates average from the BKR Fields was 22,200 boe/d.

See Figure 2 – BKR Field, Pipeline and Platform Schematic.



Figure 1 SEUK's Bruce Platform

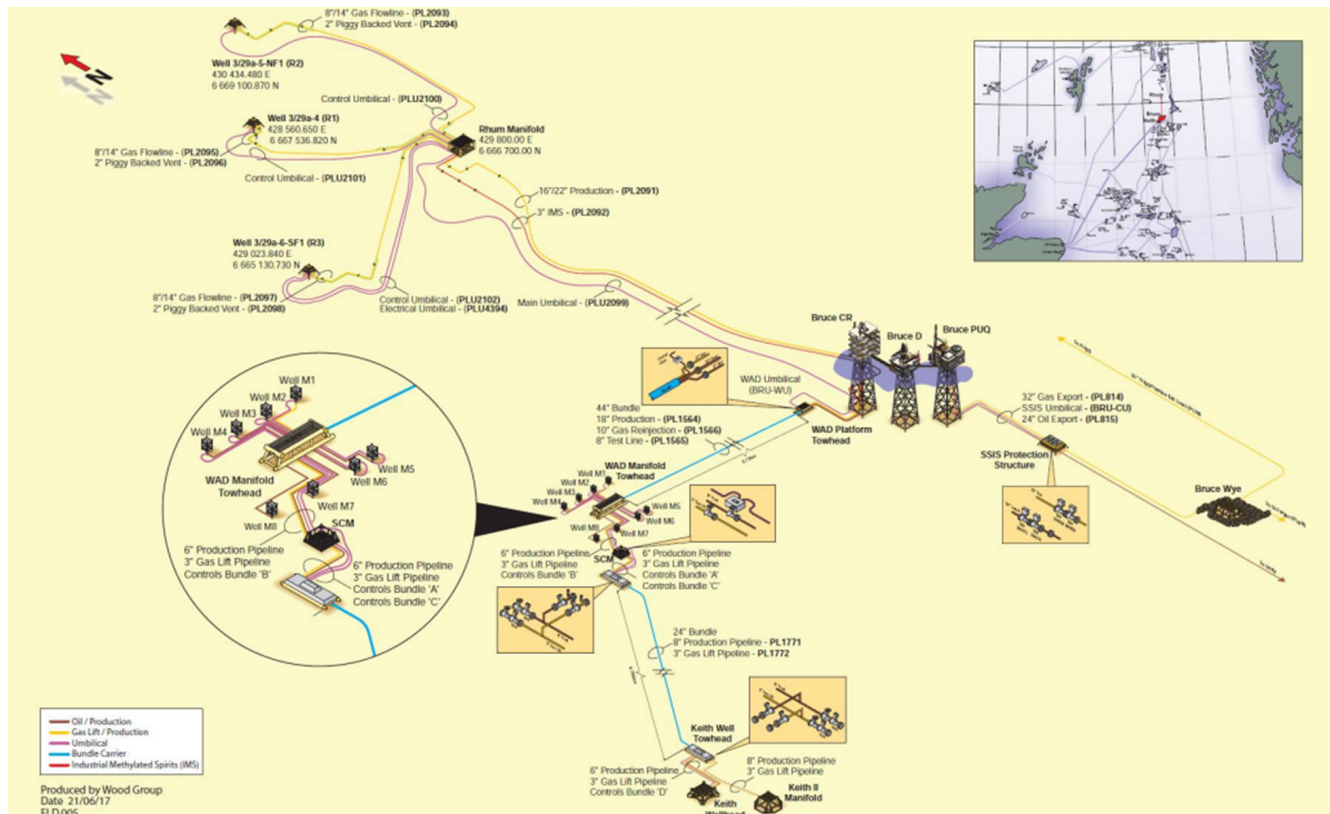


Figure 2 – BKR Field, Pipeline and Platform Schematic

# North Sea Operations

## The Columbus Field

The Columbus Field (23/16f) is predominantly a gas condensate field located in the CNS 8km from the UK-Norwegian Median Line. Serica is the licensed operator of the UKCS Petroleum Production License for the Columbus Field. The current equity interest of the field is as follows:

- SEUK (50%)
- Waldorf Energy Partners Limited (25%)
- Tailwind Mistral (25%)

Columbus is a single subsea production well that was successfully drilled in Q2 2021 and commenced production in November 2021. The pipeline and umbilical were installed and connected to a tie-in manifold structure on the Shell Arran pipeline, where Columbus hydrocarbons are co-mingled and exported via the Arran Pipeline to the Shearwater Platform (Shell UK Limited) approximately 43km southwest of Columbus .

Produced hydrocarbons (crude, condensate, and gas) are exported to shore by separate pipelines:

- Hydrocarbons (predominantly gas/gas condensate) from Columbus are exported to shore from the Shearwater Platform to St Fergus via the SEGAL pipeline.

In 2021, the daily sales gross production average from Columbus was 6,498 boe.

### Arran Subsea Schematic Subsea Tie-Back to Shearwater Platform Via Columbus Drill Centre

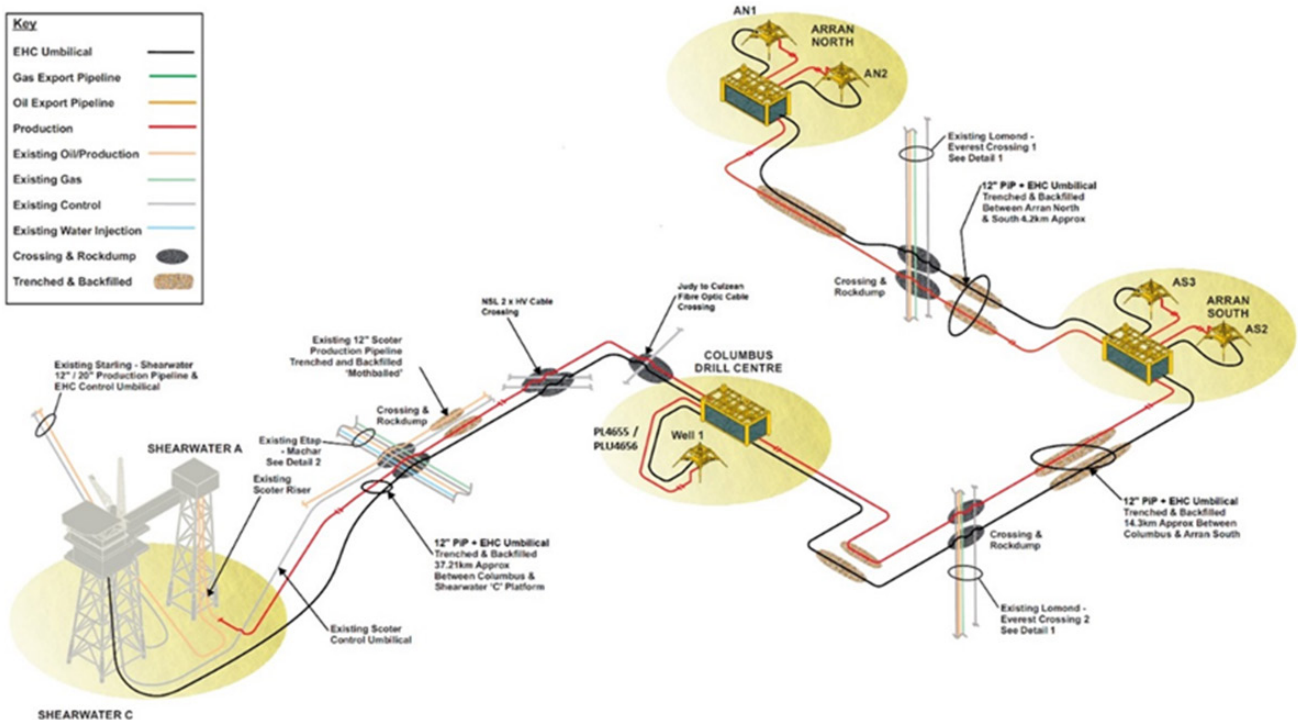


Figure 3 Columbus, Pipeline and Platform Schematic



## Serica Energy Non-Operated Assets

# NON-OPERATED PRODUCTION

### Erskine

The Erskine gas condensate field is located in the CNS within the UK sector. The Erskine field is operated by Ithaca Energy (50%) and SEUK holds an 18% non-operating interest. Harbour Energy (32%) controls production from their Lomond Platform.

The field is High Pressure High Temperature (HPHT) with the main reserves lying in three separate but overlying Jurassic sandstone producing horizons. It was originally discovered in 1981 and five wells have thus far been developed with the cessation of production anticipated to be in 2028.

The production facilities are comprised of a normally unattended installation located at the Erskine field, with production handled and controlled from the Lomond Platform (Harbour Energy). Erskine condensate is exported through the Forties Pipeline System via the Central Area Transmission System (CATS) riser platform at Everest, and gas is exported via the CATS pipeline to the CATS terminal at Teesside. The Erskine export production figures in 2021 averaged 1,650 boe/d net to SEUK, which is a reduction of 2,300 boe/d since 2020. This reduction is partially attributable to a prolonged period of platform maintenance and upgrade in mid-2021.

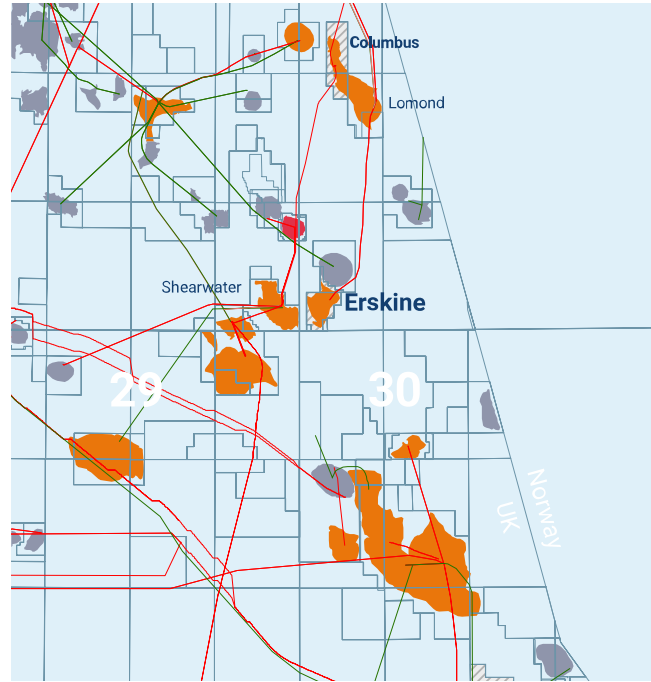


Figure 4 Erskine Location

# EXPLORATION

### North Eigg

SEUK was awarded the Exploration License (P2501) for blocks 3/24c and 3/29c in December 2019, these blocks contain the North and South Eigg prospects. The prospects are assessed to be HPHT and share similar geological characteristics to the adjacent Rhum Field. SEUK are planning to drill an exploration well at block 3/24c North Eigg in 2022. Figure 5 – North Eigg Exploration Location shows the drilling location in respect to multiple parameters including the UK-Norwegian median line, the coastline of Shetland and other oil and gas fields/infrastructure.

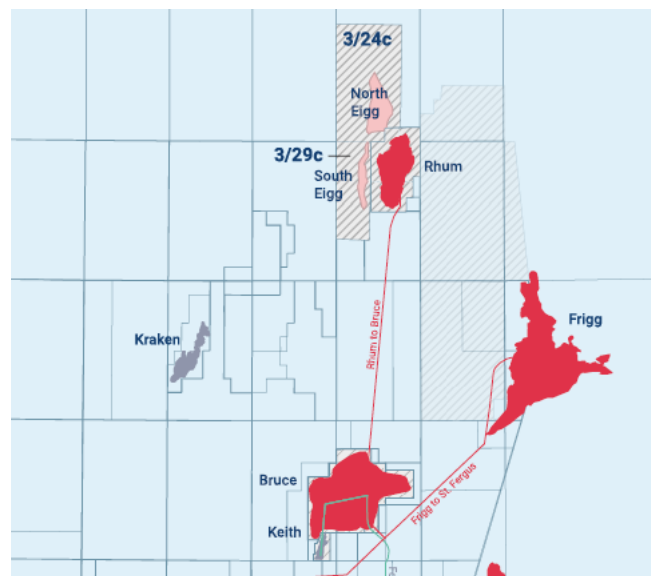


Figure 5 North Eigg Exploration Location

## Environmental Performance\*

SEUK has a strong focus on integrating environmental performance into everyday planning and operations. Environmental KPIs are reviewed on yearly basis. In 2021 these KPIs included:

- Category A flaring below 10.5 tonnes per day
- Scope 1 Carbon Intensity below 17 kg CO<sub>2</sub>/boe
- CO<sub>2</sub> emissions (UK-ETS) below 215,000 tonnes
- Total mass of general waste and dry mixed recyclables waste below 100 tonnes

## Atmospherics

The following GHG emissions reductions targets were set in the NSTD against a 2018 baseline:

- 10% reduction by 2025
- 25% reduction by 2027
- 50% reduction by 2030
- Net zero 2050

In 2021 CO<sub>2</sub> emissions from Bruce Platform, as reported under the UK Emissions Trading Scheme (UK-ETS), were 208,868 tonnes. This was 4,220 tonnes higher than in 2020. This increase was as a result of reduced production downtime, higher production volumes and variability in the export pipeline pressure as a result of third party production activity. Despite this overall increase in CO<sub>2</sub> emissions, an 18.8% reduction on the 2018 baseline of 252,236 tonnes of CO<sub>2</sub> was achieved.

Despite increased emissions SEUK achieved a reduction in carbon intensity in 2021 compared to 2020. Carbon intensity in 2021 was 17.75 kg CO<sub>2</sub>/boe, which is 30 kg CO<sub>2</sub>/boe lower than the 2020 large platform average for assets >25 years old\*\* and 0.55 tonnes of CO<sub>2</sub>/boe lower than in 2020.

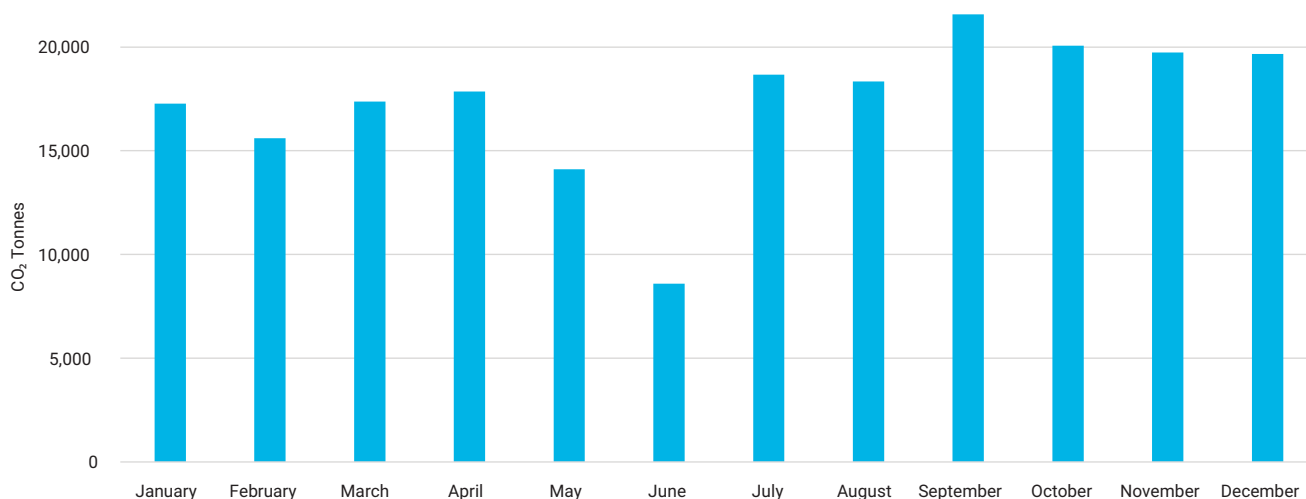


Figure 6 Monthly CO<sub>2</sub> emissions from the Bruce Platform

\* For the purposes of this ES, only the environmental performance of the Bruce Platform and associated fields will be reported. For Columbus, all environmental elements are managed by the Operator of the Shearwater Platform (Shell UK).

\*\* Carbon Intensity Reference, NSTA 2020

[https://app.powerbi.com/view?](https://app.powerbi.com/view?r=eyJrJoiZjdiYjA3NWQ0NTU2OC00NDZiLTgwMTItNDVIODVINzdkMTNmliwidCI6ImU-2ODFjNTIKLTg2OGUtNDg4Ny04MGZhLWNiMzZmMWYyMWIwZiJ9)

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## Environmental Performance continued

### Fuel Gas Consumption

In 2021, the combustion of fuel gas for the three-stage compression train on the Bruce Platform and power generation accounted for >90% of the Bruce Platform’s overall CO<sub>2</sub> emissions. CO<sub>2</sub> emissions from the combustion of fuel gas totaled 187,442 tonnes of CO<sub>2</sub> (UK-ETS). Other emissions are presented in Table 1 – Breakdown of Emissions from Fuel Gas Consumption in OCGTs (EEMS -2021).

Stack Sampling, completed in November 2020, and reported in 2021, demonstrated that when operating at loads in excess of 70% of the maximum load, the Alpha Main Export Compressor, was compliant with permitted NO<sub>x</sub> concentration emission limits. Sampling also provided site-specific Emissions Factors (EF) for NO<sub>x</sub> and CO which SEUK utilised for EEMS reporting in 2021.

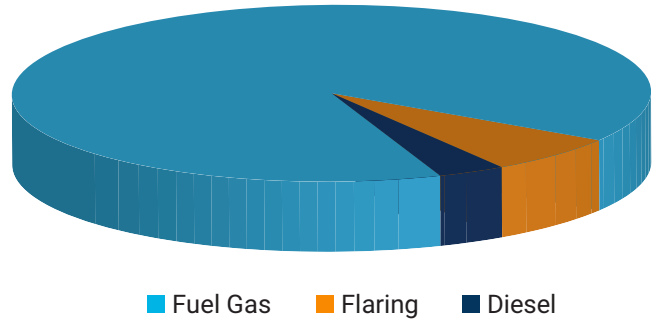


Figure 7 Total CO<sub>2</sub> Emissions by Source (UK-ETS-2021)

Improvements to fuel gas metering and fuel gas sampling are key to accurately monitoring and subsequently reducing GHG emissions. In 2021, SEUK developed plans to individually meter the fuel gas streams to our OCGTs. Once implemented, this will remove the need for fuel gas allocation to be calculated and will supplement our annual compliance monitoring of CO and NO<sub>x</sub> emissions. Table 1 – Breakdown of Emissions from Fuel Gas Consumption in OCGTs (EEMS -2021) is displayed below.

Table 1 Breakdown of Emissions from Fuel Gas Consumption in OCGTs (EEMS -2021)

	Total Use (tonnes)	NO <sub>x</sub> (tonnes)	N <sub>2</sub> O (tonnes)	SO <sub>2</sub> (tonnes)	CO (tonnes)	CH <sub>4</sub> (tonnes)	VOC (tonnes)
Turbines	73,381.54	716.94	16.14	8.07	58.71	67.51	2.64

### Diesel Consumption

Diesel is used to fuel the power generators when fuel gas is unavailable and it is also used to fuel smaller pieces of equipment such as lifeboats, fire pumps and air compressors on the Bruce Platform. When the plant is offline for significant periods of time, such as during a prolonged period of maintenance, diesel consumption can quickly increase. GHG emissions from diesel are more damaging to the environment than those emitted from the combustion of fuel gas and therefore its use on the Bruce Platform is reduced wherever practicable.

SEUK is currently exploring opportunities to reduce emissions from diesel use by using biofuels and/or fitting a smaller more efficient diesel generation unit for powering the Bruce Platform during periods of production down time. 2021 saw 33.4% less diesel consumed on the Bruce Platform compared to 2020. Overall CO<sub>2</sub> emissions from the use of diesel on the Bruce Platform in 2021 were 7,129 tonnes (UK-ETS 2021).

Table 2 Diesel Consumption Plant Operations

	Total Use (tonnes)	NO <sub>x</sub> (tonnes)	N <sub>2</sub> O (tonnes)	SO <sub>2</sub> (tonnes)	CO (tonnes)	CH <sub>4</sub> (tonnes)	VOC (tonnes)
Turbines	1640.78	22.15	0.36	3.23	1.51	0.05	0.48
Engines	543.99	32.31	0.12	1.09	8.54	0.1	1.09

## Environmental Performance continued

### Flaring

Reducing flaring remains a priority for SEUK. In 2021 SEUK reduced flaring volumes on the Bruce Platform by a further 892 tonnes compared to 2020. The total flared hydrocarbon mass in 2021 was 4,804 tonnes (EEMS), the lowest annual figure since SEUK became Operator of the Bruce Platform and a reduction of >5,000 tonnes (EEMS) on 2019's annual total. In 2021 the total mass of hydrocarbon gas flared through the High Pressure (HP) flare was 3,705 tonnes and 1,099 tonnes from the Low Pressure (LP) flare, resulting in total CO<sub>2</sub> emissions of 14,290 tonnes. The 892-tonne reduction in mass in 2021 was largely attributable to identifying and re-seating valves which were allowing gas to pass unnecessarily to flare. SEUK has set an even more ambitious flare reduction targets in 2022 to ensure a focus on continuous improvement is maintained, see Environmental Performance.

**Table 3** Total Flaring (EEMS 2021)

	Total Use (tonnes)	NO <sub>x</sub> (tonnes)	N <sub>2</sub> O (tonnes)	SO <sub>2</sub> (tonnes)	CO (tonnes)	CH <sub>4</sub> (tonnes)	VOC (tonnes)
Gross	4,804.18	46	0.38	0.52	3.77	64.81	21.51

### Chemical Use and Discharge

The use and discharge of chemicals on the UKCS is regulated under the Offshore Chemical Regulations (OCR) (2002) as amended in 2011. The use of chemicals regulated under the OCRs require risk assessment and approval for their use and discharge. All chemicals that are regulated under the OCRs have been tested to evaluate their toxicity, bioaccumulation and biodegradation, and are ranked according to their potential to cause harm to the receiving environment. The most hazardous chemicals carry a substitution (SUB) warning label. During 2021, five SUB chemicals were removed from the Bruce Production Chemical Permit. SEUK are working to further reduce the use of SUB chemicals across production operations.

Most chemicals are ranked according to the Chemical Hazard and Risk Management (CHARM) process where chemicals are ranked according to their Hazard Quotient (HQ). The HQ is the concentration at which potential exposure to the chemical results in adverse health effects. The HQ is converted into a color banding as can be seen in Table 4 – OCNS HQ and Colour Bands below. The least harmful chemicals have a Gold banding, the most harmful have a Purple banding.

**Table 4** OCNS HQ and Colour Bands

Minimum HQ value	Maximum HQ value	Colour banding	
>0	<1	Gold	Lowest hazard  Highest hazard
≥1	<30	Silver	
≥30	<100	White	
≥100	<300	Blue	
≥300	<1,000	Orange	
≥1,000		Purple	

## Environmental Performance continued

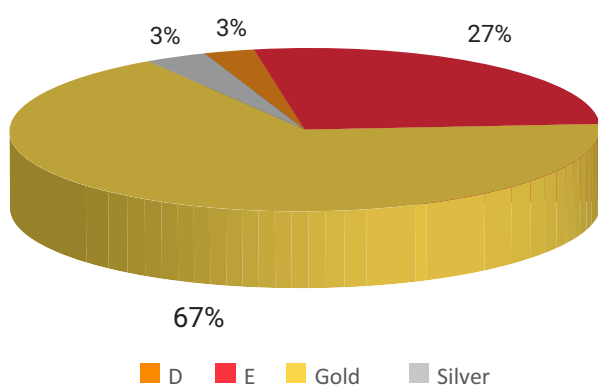
Chemicals are also ranked under the OCNS Groupings which address toxicity of the most toxic component of each chemical. The OCNS groupings can be seen below in Table 5 – Initial OCNS Groupings. OCNS group A chemicals are the most toxic, group E the least toxic.

**Table 5** Initial OCNS Groupings

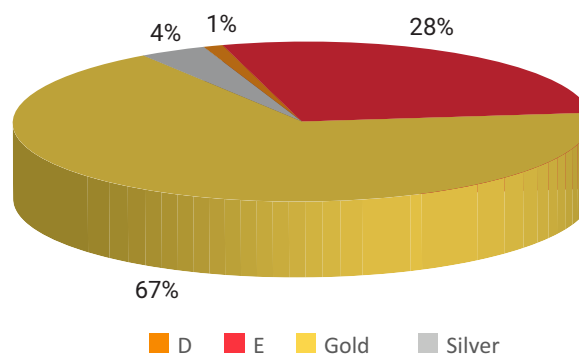
Initial grouping	A	B	C	D	E
Result for aquatic-toxicity data (ppm)	<1	>1-10	>10-100	>100-1,000	>1,000
Result for sediment-toxicity data (ppm)	<10	>10-100	>100-1,000	>1,000-10,000	>10,000

Figures 8 and 9 below present chemical use and discharge by ranking. As can be seen no OCNS group A, B or C chemicals were used or discharged in 2021.

SEUK had three Offshore Chemical Non-Compliance Reports (NCR) on the Bruce Platform in 2021. See Discharges to Sea. A full breakdown of chemical usage and discharge during 2021 can be seen in Appendix A – Chemical Use and Discharge.



**Figure 8** Chemical Usage by Ranking (HQ colour banding/OCNS grouping)



**Figure 9** Chemical Discharge by Ranking (HQ colour banding/OCNS grouping)

## Environmental Performance continued

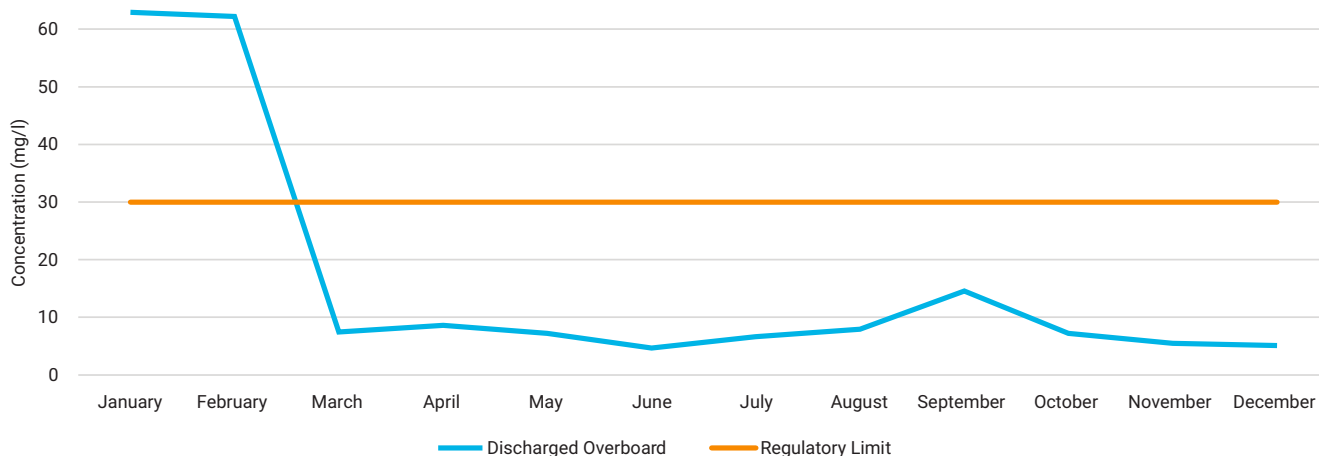
### Discharges to Sea

BKR wells produce a mixture of crude oil, condensate, and gas. Following separation, produced water (PW) is either re-injected underground in a dedicated re-injection well, or cleaned to a low oil in water (OiW) concentration, typically 5-10mg/l, using a de-oiler package, known as the CETCO skid, this PW is then discharged overboard. In December 2020, a failure of the Produced Water Re-injection (PWRI) pump resulted in PW being discharged overboard for the entirety of 2021.

Routine discharge and re-injection of PW is closely monitored and monthly concentrations of OiW, and the volume of PW discharged is used to calculate mass of oil discharged overboard. This data is recorded and reported to Offshore Petroleum Regulator for Environment and Decommissioning (OPRED) monthly, as per the conditions of the Oil Discharge Permit under the Offshore Petroleum Activities (Oil Pollution Prevention and Control) Regulations 2005 (as amended 2011) (OPPC permit).

In 2021 a total of 11,494 m<sup>3</sup> of PW was discharged overboard untreated and 58,050 m<sup>3</sup> was discharged overboard after treatment by the CETCO skid. This resulted in 69,544 m<sup>3</sup> of water being discharged overboard with an average concentration of 17.4 mg/l, discharging 1.21 tonnes of oil to sea throughout 2021.

Figure 10 – Monthly OiW Concentration below displays the average OiW concentration discharged against the permitted monthly average of 30 mg/l.



**Figure 10** Monthly OiW Concentration

SEUK reported 14 OPPC Non-Compliances in 2021, which included twelve 100mg/l exceedances and two 30mg/l monthly exceedances, 9 of which were reported in January and February before the CETCO skid was commissioned. These NCRs resulted in a calculated 0.52 tonnes of oil being discharged to sea, this is included in the 1.21 tonnes of reported discharge.

SEUK submitted seven Petroleum Operation Notifications 1s (PON1s) in 2021. In total, 0.03 tonnes of oil and 4.87 tonnes of chemicals were released from the Bruce Platform as PON1s. A significant proportion of chemical volume is due to an ongoing release of hydraulic fluid (Oceanic HW443ND) from a Subsea Isolation Valves (SSIV). First observed in June 2018, the release is of a Gold band chemical at a low release rate and therefore poses little risk to the receiving environment. Notwithstanding this, work is ongoing to significantly reduce the rate of release and subsequently the volume.

## Environmental Performance continued

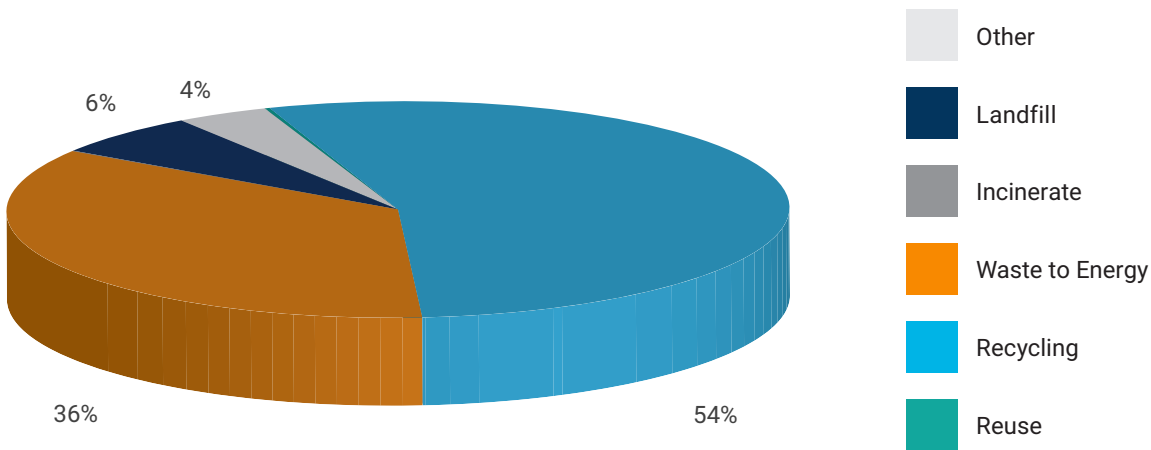
### Waste

The bulk of waste generated offshore is domestic waste resulting from life on the platform and industrial waste generated from ongoing upgrades and maintenance activities. Many of these waste streams are segregated at source and returned to shore to be reused, recycled or sent to a Waste-to-Energy plant. Waste segregation offshore is managed in alignment with The Merchant Shipping (Prevention of Pollution by Sewage and Garbage from Ships) Regulations 2008, which prohibits the disposal of solid waste at sea. These waste items can include scrap metal, barrels, wood, plastics, cardboard, aluminium cans, medical waste and WEEE (Waste Electrical and Electronic Equipment).

In 2021, Bruce generated 199 tonnes of solid waste. Serica reduced the overall volume of waste produced by 55 tonnes, compared to 2020, and reduced the overall volume of waste sent to landfill by two thirds from 2020, down to just 12.4 tonnes.

Serica has robust arrangements in place for the management and segregation of waste materials generated by its BKR operations, through application of its 'Waste Management' procedures. SEUK's waste policy is that, wherever possible, waste should be removed, reduced, reused or recycled according to the waste hierarchy.

Figure 11 – Percentage of Waste by Method of Disposal (EEMS -2021) below provides a breakdown of methods of disposal of waste generated offshore on the Bruce Platform.



**Figure 11** Percentage of Waste by Method of Disposal (EEMS -2021)

In 2022, Serica is working with our contractors and suppliers to investigate ways in which waste can be removed or reduced at source.

# Appendix A – Chemical Use and Discharge

**Table 6** Chemicals Use and Discharged in 2021 (EEMS)

CEFAS Reg No.	Chemical	Supplier	Total Use Yearly (kg)	Total Discharge Yearly (kg)	Rating/Label
26868	ACPC11340A	ChampionX (Champion Technologies Ltd)	0	0	Gold
27448	ACPC19610A	ChampionX (Champion Technologies Ltd)	0	0	Gold
28663	ACPC26004B	ChampionX (Champion Technologies Ltd)	1,253	1,253	Silver
29412	ACPC36004B	ChampionX (Champion Technologies Ltd)	5,919	5,919	Silver
26839	AFMR20400A	ChampionX (Champion Technologies Ltd)	385	385	Gold
27102	BIOC11150A	ChampionX (Champion Technologies Ltd)	0	0	Gold
27501	BIOC46527A	ChampionX (Champion Technologies Ltd)	1,426	1,426	Gold
27921	BIOTREAT 4632 EU	Clariant Oil Services UK Ltd	347	347	Gold
4871	BIOTREAT 7407	Clariant Oil Services UK Ltd	0	0	Blue
25732	BIOTREAT Sodium Hypochlorite	Clariant Oil Services UK Ltd	6,637	6,637	E
26910	CORR10629A	ChampionX (Champion Technologies Ltd)	3,619	0	Gold (SUB)
26942	CORR11389A	ChampionX (Champion Technologies Ltd)	2	0	C (SUB)
27818	CORRTREAT 15340	Clariant Oil Services UK Ltd	0	0	C
25570	EC6804A	ChampionX (Champion Technologies Ltd)	0	0	Gold
27487	EMBR17904B	ChampionX (Champion Technologies Ltd)	0	0	Gold
26850	EMBR18031A	ChampionX (Champion Technologies Ltd)	0	0	Gold
27617	FOAM20505A	ChampionX (Champion Technologies Ltd)	3,072	3,072	Silver (SUB)
3958	FX2504	Nalco Champion (Nalco Ltd)	0	0	Gold
26652	HSCV10610A	ChampionX (Champion Technologies Ltd)	171,618	157,167	Gold
24858	Hydrosure HD-5000	ChampionX (Champion Technologies Ltd)	0	0	Gold
27979	IMS	Schlumberger Production Technologies	11,835	11,835	E
23398	Masava Max	MASAVA KEMI Aps	0	0	Gold



CEFAS Reg No.	Chemical	Supplier	Total Use Yearly (kg)	Total Discharge Yearly (kg)	Rating/Label
23262	MEG (all grades)	Schlumberger Production Technologies	11,463	6,520	E
27967	Monoethanolamine 80%	Schlumberger Production Technologies	0	0	Gold
23948	MONOETHYLENE GLYCOL (MEG) (ALL DILUTIONS)	Clariant Oil Services UK Ltd	0	0	E
28617	OCEANIC HW 740 R v4	MacDermid Offshore Solutions	0	0	D
4688	Oceanic HW443ND	MacDermid Offshore Solutions	7,316	1,911	D
27913	OCEANIC HW740R v3	MacDermid Canning Limited	1,101	1,101	D
23073	Oceanic Red LTF	MacDermid Offshore Solutions	0	0	E
5586	PHASETREAT 3701	Clariant Oil Services UK Ltd	3,659	3,194	Gold
4282	PHASETREAT 6094	Clariant Oil Services UK Ltd	280	280	Gold
23542	RX-5208	Roemex Ltd	0	0	Gold
27383	RX-5254	Roemex Ltd	0	0	Gold
4579	RX-9022	Roemex Ltd	0	0	Gold
26998	SCAL16157A	ChampionX (Champion Technologies Ltd)	0	0	Gold
27014	SCAL16566A	ChampionX (Champion Technologies Ltd)	6,448	6,448	Gold
3683	SCALETREAT 852ND	Clariant Oil Services UK Ltd	700	700	Gold
23185	SCALETREAT DF 8064	Clariant Oil Services UK Ltd	0	0	Gold
23125	SOBO S GOLD 08	Oil Technics Ltd	0	0	Gold
26268	SODIUM HYPOCHLORITE 5-15.5%	Schlumberger Production Technologies	51,945	51,945	E
2750	SODIUM HYPOCHLORITE SOLUTION GENERATED IN SITU	Operator generated in situ chemical	0	0	E
1934	TEG	Schlumberger Production Technologies	14,829	14,829	Gold
3546	Triethylene Glycol	Clariant Oil Services UK Ltd	0	0	Gold
5694	Turbo-K Marine	Turbo-K Ltd.	57	57	Gold



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