

The Kuwaiti Digest

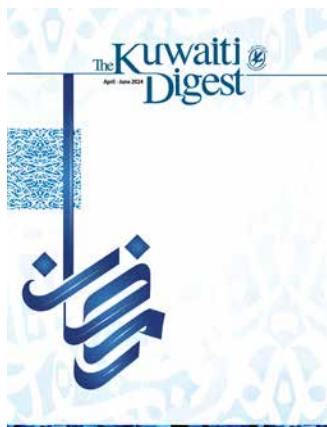
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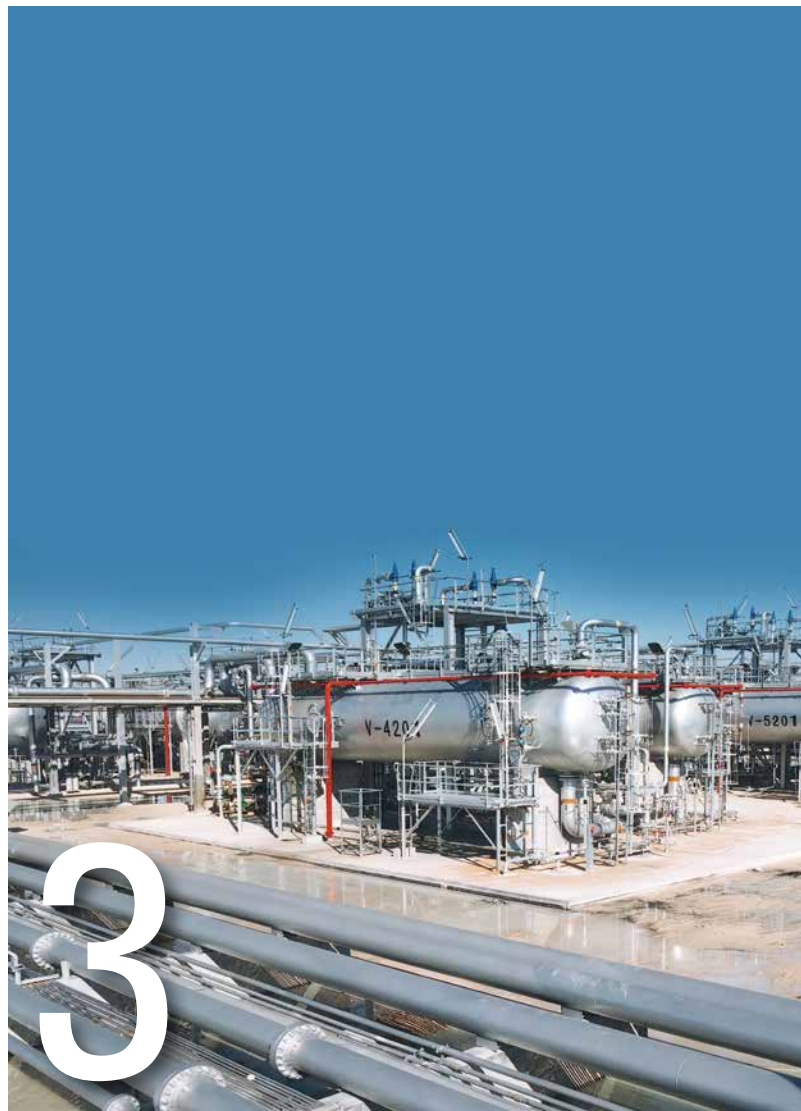
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Letter from the Editor



Eisa Abdul Rahman Al Maraghi

Deputy Chief Executive Officer
Planning & Innovation

This issue of the Digest spotlights many milestones surpassed, achievements made, and exceeded expectations; and also coincides with the Holy Month of Ramadan and the recently held National Day celebrations with the ascension of His Highness, Sheikh Mishal Al-Ahmad Al-Jaber Al-Sabah, to the rule of Kuwait. In this new era, we strive, under the leadership of His Highness the Amir, through His Highness's guidance and continuous support, for a prosperous future, and fulfilled dreams.

This issue features two brilliant achievements from North Kuwait; which held a large celebration on the occasion of producing 600,000 bpd and a projected 800,000 bpd. This achievement would not have been realized without the strenuous efforts of all employees, partners, service-providers, and contractors. I am confident of the Company's ability to overcome its challenges, through a firm belief in our potential.

Another achievement made in the same Directorate involves Gas Production and the ongoing efforts to reach 950 million to 1 Billion cubic feet per day. This is a remarkable achievement considering

the modest beginnings of production, and the challenges resulting from the complexity of the reservoirs.

These achievements also extend to South & East Kuwait, which successfully restored its pre-covid levels of production, and is already striving towards further achievements, where Burgan Field contributed to supporting Kuwait's development that resulted in tremendous financial returns.

Finally, the Digest covers a conference that marked the launch of the sector's 2040 Strategy and the Energy Transition Strategy 2050, under the slogan "Sustainable Energy for a Promising Future". This comes at a time when the sector is undergoing a radical transformation in the energy industry worldwide.

As we enter the Holy Month of Ramadan, I would like to close by asking of Allah Almighty to return this occasion with goodness, righteousness, and blessings. We also pray to Allah to perpetuate the blessing of peace and security for our beloved nation, and bring us continuous progress and prosperity.

THE KUWAITI OIL SECTOR DRAWS A ROADMAP FOR THE FUTURE

During a Conference launching its 2040 Strategy

- Minister Al-Barrak: Kuwait is committed to investing in the oil sector and continuing to fulfill its global role in meeting consumers' needs.
- The late Sheikh Nawaf Al-Sabah: The Kuwaiti oil barrel will remain one of the mostly highly priced in the world due to its lower cost of production and lesser emissions.
- Al-Eidan: One of our joint projects aims to recover more than 100 million metric tons of CO2 to use over the next 25 years.



The Kuwaiti oil sector is achieving continuous success thanks to well-studied plans, strategies, and goals; which pass on to the implementation of scheduled projects and initiatives that contribute to the development process, keep pace with current trends, and usher it into a new era that enhances its position in the global market.

At a time when the sector is undergoing a radical transformation in the energy industry worldwide, and under the patronage of His Highness then-Prime Minister Sheikh Ahmed Nawaf Al-Ahmad Al-Jaber Al-Sabah, KPC and its subsidiaries held a high-level conference. The conference marked the launch of the sector's 2040 Strategy and the Energy Transition Strategy 2050, under the slogan "Sustainable Energy for a Promising Future".

The conference, which was held at Sheikh Jaber Al-Ahmad Cultural Center, was attended by His Excellency, then-Deputy Prime Minister, Minister of Oil and Minister of State for Economic Affairs and Investment, Dr. Saad Hamad Al-Barrak;

KPC CEO Sheikh Nawaf Saud Al-Nasser Al-Sabah, KOC CEO Ahmad Jaber Al-Eidan, and a number of senior officials, representatives of state agencies, and oil sector leaderships.

Goals and Achievements

The conference featured speeches from His Excellency Minister Al-Barrak, KPC CEO Sheikh Nawaf Al-Sabah, KOC CEO Ahmad Jaber Al-Eidan, KNPC CEO Wadha Al-Khatib, Ag. KIPIC CEO Waleed Al-Bader, KPI CEO Shafi Al-Ajmi, and PIC CEO Nadia Al-Hajji, in addition to the Managing Director of Planning & Finance at KPC, Bader Al-Attar.

It highlighted the strategic directions adopted until 2040, which aim to optimize the

value of Kuwait's hydrocarbon resources by gradually reaching a sustainable crude oil production capacity in the State of Kuwait (including the Divided Zone) of 4 million barrels per day in 2035, and maintaining this capacity until 2040.

The strategic directions also aim to reach a maximum of 1.6 million barrels per day of refining capacity in 2025 at the highest transformative level, and to diversify sources of income for the State of Kuwait through the expansion of petrochemical activities inside and outside the country, in order to achieve a leading global position by reaching 14.5 million tons per year in 2040.

The conference also focused on introducing how the completion of future initiatives and



projects of the oil sector would positively impact the State of Kuwait, in addition to KPC and its subsidiaries' plan to achieve carbon neutrality by 2050, and continue to reduce their carbon emissions.

Al-Barrak: The Importance of Development

The first speech was delivered by His Excellency, Deputy Prime Minister, Minister of Oil, Minister of State for Economic Affairs and Investment and Chairman of the Board of Directors of KPC, Dr. Saad Al-Barrak, who stressed the importance of developing the oil industry despite the challenges posed by climate change.

He pointed out that the world is witnessing an important shift towards the use of renewable and clean energy sources, which demands a long-term strategic vision. He stressed the extent to which officials are aware of the importance of oil as a strategic resource, while also working hard to move forward in the energy transition strategy and invest in national cadres and new technologies.

He stated that, in line with the Government Action Program (2023-2027) and the National Development Plan of the State of Kuwait, this event will launch KPC's strategic directions until 2040, and the roadmap to achieve net-zero carbon emissions in 2050.

Lower Cost and Lesser Emissions

For his part, KPC CEO Sheikh Nawaf Saud Al-Sabah stressed that oil will remain a vital component of any equation or scenario in the energy transition plan, pointing out that ef-



forts for less carbon-intensive and less expensive oil, which is what distinguishes Kuwaiti oil, will surely continue.

Sheikh Nawaf Al-Sabah stated that the transition from oil to renewable and alternative energy will be gradual, explaining that KPC has updated its strategic orientations towards the growth of its operations in exploration, production, refining, and petrochemicals inside and outside Kuwait.

He pointed out that the Corporation and its subsidiaries' employees are aware of the oil sector's role in the development of the Kuwaiti economy, as it secures 90% of the revenues of the state treasury, and provides

the required fuel for Kuwaiti citizens.

The Corporation is keen to invest in the national human element, as it is the key to excellence for the various operations of the Corporation and one of the pillars of the oil industry in the State of Kuwait. Strategic directions have given a major role to the private sector in establishing subsequent manufacturing industries that raise the Kuwaiti GDP.

A Wealth of Expertise

Meanwhile, KOC's CEO Ahmad Jaber Al-Eidan stated that the oil and gas industry faces many new challenges to meet the global energy market needs,



which necessitates KOC to continue to excel in its production and adapt to these challenges through innovation and sustainability.

Al-Eidan pointed out that in order to keep pace with advanced technologies in the field of remote operations management, the Company is working to enhance the application of smart solutions to raise operational efficiency. This is being conducted in a manner that brings about the possibility of direct and continuous supervision to optimize production processes to the highest level, and achieve the optimal utilization of our hydrocarbon resources.

Low Emissions

Al-Eidan added that KOC's role in implementing the Corporation's Energy Transition Strategy consists of working to reduce greenhouse gas emissions; including Carbon Capture, Use, and Storage (CCUS) technologies. The rate of reducing carbon emissions using this technology is approximately 37%. Accordingly, KOC has adopted a strategy that includes enhanced oil recovery activities using carbon dioxide, as well as exploring opportunities to capture carbon dioxide and determine the optimal methods to store it.

He revealed that one of the most important initiatives is the enhanced oil recovery project that uses carbon dioxide in the Managuish field in West Kuwait on a pilot scale. This project is expected to lead to an increase in oil recovery by about 10%, which contributes to the sustainability of oil production in the long term and storing large quantities of carbon dioxide. The Company is simultaneously studying other reservoirs in which carbon dioxide injection can lead to similar results that contribute to increasing production and reducing emissions.

Ongoing Investments

Managing Director of Planning & Finance at KPC Bader Al-Attar gave a similar speech in which he stated that the global trend for decision-makers is the continuous need to secure energy by enhancing the supply of oil, gas, and derivatives, while working to reduce greenhouse gas emissions. Oil sector companies in particular and in the energy field in general, prioritize energy transition to reach carbon neutrality, while preserving the traditional processes of exploration, production, refining, manufacturing, and petrochemicals.

He stressed that this principle reflects the continued global demand for oil and gas production and not the momentary shift to alternative energy production, as history has never witnessed the complete phasing out of an energy source in favor of a new one.

The most notable initiatives and projects to reduce carbon emissions and achieve carbon neutrality include the production and storage of renewable energy, enhancing energy efficiency,

reducing the Gas Flaring Rate to zero, and CCUS. Al-Attar stated that K-companies will invest approximately \$ 110 billion in these projects, through several partnerships and cooperation with state agencies, the banking sector, and Kuwaiti and international scientific institutions specialized in environmental technology.

A Number of Initiatives

For her part, KNPC CEO Wadhah Al-Khateeb confirmed in her speech that her company completed many projects aimed at developing its operational and environmental performance and improving the quality of its products.

Al-Khateeb added that her company culminated its efforts in this field by operating the environmental fuel project, which is the largest project in the history of the Kuwaiti oil sector, through which the company's refining capacity reached 800,000 barrels a day.

She pointed out that, in March 2022, the operation of the fifth liquefied gas pipeline at Mina Al-Ahmadi refinery contributed

to increasing the company's total gas production capacity to more than 3 billion standard cubic feet per day, and 332,000 barrels of condensate and liquefied gas per day, all in line with international environmental standards.

Al-Khateeb added that the company formed a specialized team to achieve KPC's Energy Transition Strategy 2050, pointing out that this team presented a set of advanced initiatives to contribute to its future plan to reduce gas emissions, including the establishment of additional units for gas flaring recovery at the Mina Al-Ahmadi and Mina Abdullah refineries. She explained that these initiatives also included studying the potential for producing blue hydrogen and biofuels, and expanding the use of solar panels.

Success Stories

KPI CEO Shafi Al-Ajmi stated that investing in Duqm Refinery Company for Petroleum and Petrochemical Industries project in Oman is one of KPC's success stories. He explained that this decision came in line with the Corporation's strategic directions regarding the refining, manufacturing, and retail sector outside Kuwait. He stated that the project is the largest joint venture between two Gulf countries within the Special Economic Zone at Duqm, with a refining capacity of 230,000 barrels per day, and it applies the latest global technologies in the aforementioned sectors.

Al-Ajmi added that high quality diesel, jet fuel, and naphtha products, as well as sulfur and petroleum coke, were produced; thus fulfilling the contract for all refinery products. These are then exported to international markets, marking a



new era for Duqm Refinery and Kuwait International Petroleum Company.

A Strategic Refinery

Ag. KIPIC CEO Waleed Al-Bader explained that after completing its third operation, Al-Zour Refinery would reach a total capacity of 615,000 barrels per day, which contributes to achieving one of the main strategic directions of the Corporation to raise the refining capacity of Kuwait to 1.6 million barrels per day.

Al-Bader stated that the decision to establish Al-Zour Refinery came with the aim of building a strategic refinery to produce fuel with low sulfur content to meet current or prospective local needs for energy. He pointed out that the refinery can process different types of Kuwaiti light, medium, and heavy oil; giving it a competitive and economic advantage.

Numerous Uses

PIC CEO Nadia Al-Hajji was the final speaker, reiterating her company's commitment to developing basic petrochemicals by implementing projects and takeover opportunities in accordance with KPC's 2040 strategic plan, aiming to reach 14.5 million tons of basic petrochemical products and achieve 1.2 million tons of specialized petrochemical products.

She also stated that PIC is committed to initiating detailed technical studies for the fourth Olefin Project, to head straight to final investment decisions and implement the project along with the digital transition and sustainability initiatives, energy transition, renewable energy, and circular economy, in coordination with the relevant authorities.





Gas Production and the continuous efforts to reach 950 million to 1 billion cfd

- KOC embarked on the journey of free gas production in 2007-08 with a modest production of about 150 MMSCF/D from one facility.
- Concerted and dedicated efforts from multiple KOC Groups facilitated our current remarkable achievement of quadrupling the production to the current 600+ MMSCF/D gas production, processed through five gas processing facilities.
- This journey has seen KOC successfully drilling, in a safe manner, very challenging 250+ deep wells. We are currently deploying the largest fleet of 20 deep drilling rigs and 5 deep workover rigs to further enhance production to our national ambition of 950MMSCF/D rate by 2025.
- A systematic and balanced approach of appraisal and concurrent field development helped us ramp up production, while adding new hydrocarbon reserves to the State of Kuwait.
- This remarkable achievement would not have been possible without the strategic vision, support, and guidance of KOC's Higher Management and leadership.

NKJG Strategic Objective

GFDG plans and manages all activities and is responsible for carrying out all types of sub-surface studies, appraisal and development drilling, surface facilities optimization, and production operations to produce marketable hydrocarbon products. It also strives to develop Jurassic Gas to fulfill KOC's Strategic Objectives and achieve targets.

NKJG Asset Introduction

North Kuwait Jurassic Gas's assets are as follows:

- 10 fields
- 18 rigs
- 4 + 2 facilities
- 1000's km Flowlines & Pipeline
- 250 + wells.

North Kuwait Jurassic Gas consists of 10 fields:

- Main Fields: Sabriyah, Raudhatain, Dhahi, Um Niqqa and NW Raudhatain.
- Small Fields: Bahra, Sudira, Abdali, Arfijah and Liyah
- E2P: A small field, Sukhairat, will be received in FY23/24

Reservoirs:

- Primary: Middle Marrat Reservoir: The conventional have high matrix quality reservoir with good porosity and permeability.
- Secondary: Non-MMR/Unconventional Reservoirs: The unconventional have very poor matrix quality reservoirs with low porosity and permeability.

NKJG reservoirs are generally sour, deep, and complex; with a high pressure and temperature.

Complex and Challenging Fields

According to CEO Ahmad Jaber Al-Eidan's Messages - Team Briefing #2 Year 2023/24, "Our NK Jurassic Gas reservoirs rank among the most challenging fields in the world in terms of complexity. KOC measured up to this challenge".

Jurassic Gas reservoirs hold attributes of all possible complexities:

These are very deep reservoirs in a depth range of 14000 to 17000ft with High Pressure and High temperature characteristics.

Being Carbonate reservoirs, they have inherent characteristics of high variability in properties with respect to porosity-permeability and pore throat, making the reservoir characterization an extremely challenging task. These reservoirs have a large range of porosity (2-28%) and permeability (0.1 to 100mD).

Another layer of complexity is the presence of natural fracture corridors, controlling well production. Jurassic reservoir fluids are also highly variable across the operating area, ranging from volatile oil to gas condensate with varying levels of H₂S. This extreme variability necessitates application of different development concepts per sector.

Based on the well data, we are also seeing a highly variable nature of the free water level with tilting towards the north.

A benchmarking exercise, conducted across global carbonate reservoirs by IOC, ranked North Kuwait Jurassic reservoirs as the most 'complex category'. All these complex reservoir and fluid attributes make the field development and processing hydrocarbon fluids through common gas processing facilities an extremely challenging task.

Overcoming all challenges

The key to overcoming these challenges is the application of the right mix of technology and work flows. Since the inception, data acquisition and integration was accorded high priority to narrow the reservoir uncertainty. State of the art modelling work flows were deployed, expertise was drawn from top tier global academic staff to highly

skilled industry experts who jointly worked with KOC's national and expat staff, and a very high emphasis was accorded to ensure the application of the highest HSE standards, across the entire value chain.

Additionally, state of the art on-line monitoring of well and production behavior was applied through KwIDEF, as well as technology and work flows through collaboration with Shell IOC and other global service providers.

Developing the National Workforce

Key underpinning in the journey of Gas development has been developing the national work force. This is one of the main deliverables under the



Shell ETSA, and has met with commendable success.

As part of this key requirement, KOC-Shell developed a unique TCL learning process which involved intensive learning and skill development for national cadres through various channels. The process involves hands-on one-on-one coaching sessions to OJT and mini-learn events.

National staff were also exposed to cutting edge global developments through active participation in regional and international technology, and conferences and workshops.

In line with the 2040 Strategy

North Kuwait Jurassic Gas is

fully aligned with the strategic objective of 'Maximizing the Strategic Value from Gas' set forth by KPC. It has the ambition to ramp up production to nearly 1BCF/D gas rate by 2025. KOC leadership has accorded the highest priority for achieving this ambition and thus diverted all critical resources like deep drilling rigs to the Gas Asset.

Technological Innovations Adopted

Numerous state of the art technological innovations and solutions were adopted along this fruitful journey, such as:

- Online monitoring of well production for optimizing

production through KwIDF.

- Continuous innovation in improved well designs including the application of mono-bores.
- Application of state-of-the-art well completions like multi-stage completions in up to 12 stages.
- Drilling long lateral horizontal wells with drainhole in excess of 3000ft.
- Advanced Geosteering applications for precision well placement in thin reservoirs.
- Stimulation techniques ranging from acid fracturing to proppant fracturing.
- Application of CO2 fracs.
- Improved reservoir contact through high angle wells.



Soil Treatment & Remediation by 2027

The treatment area reaches one million square meters and is visible from space.

- *Al-Qahtani confirmed that the completion rate exceeded 40 percent, and that the volume of treated soil exceeds the size of the “Al Hamra Tower” by two and a half times.*
- *Biological treatment makes use of the ability of microorganisms and water to decompose hydrocarbon components.*
- *Soil washing technology relies on water and solvents, in addition to raising the temperature to separate the components.*
- *Contaminated areas are excavated and their soil is transported to the treatment area to deal with it according to its level of contamination.*
- *The biggest challenge is removing explosives, as experts discover them daily.*



Soil remediation projects are an important and necessary step to preserve the Kuwaiti environment. This is why KOC concluded a series of contracts between 2021 and 2023 aimed at treating and remediating up to 23 million cubic meters of soil contaminated by oil spills resulting from the Iraqi invasion. The Kuwait Environmental Remediation Program (KERP) is considered the largest environmental remediation project in the world, working to restore the natural ecosystem in contaminated lands, preserve the environment, and restore vegetation. To learn about the project, the achievements made, and the techniques applied to handle contaminated soil, The Digest met with TL Soil Remediation Projects-I in the Company, Dr. Mohammad Al-Qahtani, who reviewed the Company's efforts to get rid of contaminated soil, remediate it, and restore vegetation in the affected areas.

Effects reaching Mount Everest

At the beginning of the interview, Dr. Al-Qahtani explained that the volume of soil that must be treated and cleansed



from the effects of pollution resulting from the Iraqi invasion in 1990, and remediated to its previous natural state, amounts to 23 million cubic meters. Five million are in North Kuwait, and 18 million in South Kuwait; divided into eight projects. Two of them are in the north and six are in the south.

Al-Qahtani stated that when the Iraqi army set fire to more than 700 oil wells at the end of the war to liberate Kuwait, the largest environmental disaster in human history was the result, as the effects of the fires reached Mount Everest.

Treated soil and Hamra Tower

Al-Qahtani pointed out that the initial work on soil remediation projects included studying means to improve the treatment of contaminated soil, exploring the Iraqi invasion's remains of unexploded ordnance, surveying work, determining the quantities of contaminated soil – including oil lakes, drilling and transportation works, and identifying primary treatment areas to separate the contaminated soil.



Dr. Mohammad Al-Qahtani
TL Soil Remediation Projects-I

He explained that the treatment area reaches one million square meters and is visible from space.

Regarding the completion rate in soil remediation projects, Al-Qahtani confirmed that it has surpassed 40 percent, explaining that the amount of soil treated is equivalent in size to the Al-Hamra Tower building emptied two and a half times, and that we have come a long way in our operations, where productivity was constantly on the rise. He went on to say that treatment and remediation projects vary, due to the varying dates for signing contracts. He stated that if things go as planned, the year 2027 will witness the completion of soil treatment and remediation projects.

Waste Landfills and Treatment Methods

Regarding the landfills for un-treatable soil waste, Al-Qahtani explained that landfills serve as a wastebasket for this soil. He pointed out that two landfills for contaminated soil have been prepared in North Kuwait and three in the South, protected by walls inside the Company's security fence. Specialized Teams handle this waste.

He added that backfilling operations are carried out scientifically



and in layers, and the materials used are determined according to their size and source.

Regarding treatment techniques, Al-Qahtani explained that there are two types: organic and biological, for soil in which the pollution level is less than 5 percent. As for soil in which the pollution rate exceeds 7 percent, washing techniques are used.

He added that organic treatment processes utilize microorganisms and fertilizers and are left for a period of around three to four months, while spraying them with water and reducing the soil. In the washing process, solvent materials are used to separate oil materials from the soil.

Handling contaminated areas

Regarding the mechanism for handling contaminated areas,

Al-Qahtani stated that the areas are excavated and their soil is transported to the treatment area to deal with it according to its level of contamination. There is a large work site established for this purpose.

He explained that each treatment contract comes with different specifications, and all contractors have their own method of organic washing and treatment. The soil washing process results in healthy soil that is returned to its natural place and can be cultivated in the future with wild plants, soil that cannot be treated that is sent to landfills, and liquids contaminated with petroleum and detergents, that are transported to the hazardous waste plant to be treated accordingly.

Al-Qahtani added that these operations are carried out under the supervision of the Company's accredited laboratories,

which also conduct soil examinations before, during, and after treatment.

Al-Qahtani pointed out that there is firm commitment to the works and requirements of treatment operations from contractors under strict control of the concerned Teams.

Unexploded Ordnance

Regarding the factors that are taken into account in treatment priorities, Al-Qahtani pointed out that the sites affected by the invasion that were identified by the United Nations, environmental organizations, and relevant authorities in Kuwait are currently being treated. These authorities conducted preliminary studies on the sites, in which they determined the quantities that needed to be treated. The presence of oil in the ground for a long period

of time led to quantities leaking into the soil, while there are areas that were unaffected by leakage because the soil was impermeable.

He added that the depth of an oil leak in one of the projects reached 5 metres, explaining that his Team does not handle any leakage in the pipes resulting from operations, where it is the responsibility of the company in charge. The funds obtained by the Company to carry out soil remediation operations are subject to the supervision and follow-up of the United Nations and the KNFP - Kuwait National Focal Point, which includes the affected parties related to the KERP, such as the Ministry of Defense, the Ministry

of Electricity, the Environment Public Authority, and KISR; but the lion's share goes to Kuwait Oil Company.

Regarding the difficulties of dealing with some of the areas affected by the invasion, Al-Qahtani said that it is not possible to deal with some areas directly due to the presence of explosives and munitions, which are detected by individuals assigned by the Ministry of Defense. Surveying and transportation operations do not begin until the detection of Unexploded Ordnance is completed. Experts find them on a daily basis and report them to the relevant authorities.

Vegetation

Regarding how contaminated areas can return to their previous state, Al-Qahtani said that all areas that were polluted in the invasion will go back to normal, noting that there are separate contracts for cultivating the soil with Kuwaiti fungal plants.

He explained that contractors took quantities of treated soil and cultivated it, with instant results, where indoor gardens were planted around the temporary project offices.

The plants that are planned to be cultivated include: Ramth (Haloxylon), Arfaj (Rhantarium epapposum), Artah (Calligonum), Thumam (Panicum), Gurdaq (Nitraria), and Talha and Sidr Trees.



South & East Kuwait managed to recover its pre COVID production levels

- The CEO: Burgan Field contributed to supporting Kuwait's development that resulted in tremendous financial returns.
- Al-Eidan: I am confident that the Company has enough potential and capabilities to increase the production capacity of Burgan Field.
- Al-Maraghi: These achievements would not have been possible without the strenuous and dedicated efforts of our employees and partners.
- Al-Maraghi: Burgan's development journey will not stop, and we will build on our predecessors' work.
- South & East Kuwait Directorate celebrates restoring pre-Covid 19 pandemic production rates in Burgan field.



Under the patronage and with the attendance of CEO Ahmad Jaber Al-Eidan, under the slogan "Greater Burgan Field: a legacy of past achievements and future opportunities", the S&EK Directorate held its meeting to celebrate the achievements realized in the past few years, at the Ahmed Al-Jaber Oil & Gas Exhibition.

The meeting was attended by the CEO's Deputies and a number of Group Managers, Team Leaders, and employees from other Directorates; along with representatives of companies providing various services to KOC.

The Kuwaiti Digest covered this meeting and reported the following:

The Essence of Production

At the beginning of the event, the Directorate presented a video to showcase its achievements in the past few years; covering various sectors including HSSE, production operations, and development.

Then, CEO Ahmad Jaber Al-Eidan gave a speech where he expressed his pleasure where he expressed his pleasure to meet the attendees, with a renewed spirit to overcome the new challenges and enhance oil and gas production.

Al-Eidan stated that the Greater Burgan Field, which is the world's second largest sandstone field, is the backbone of oil production in Kuwait. Production from this field has contributed to supporting development and progress in the State of Kuwait for decades. This field has always provided significant financial returns, which urges us to discuss the best means to enhance its production.



Al-Eidan added that the chief goal of this meeting is to cooperate in order to find new ways to increase the field's oil and gas production. He also expressed his confidence that the Company has a great potential to raise production rates in Burgan field, thus providing further economic returns for the State of Kuwait.

Strenuous and Sincere Efforts

In his speech, then-DCEO S&EK Eisa Al-Maraghi expressed his hope that the meeting would feature fruitful discussions, stressing that it aims to shed light on the outstanding achievements the Directorate made in the last few years.

Al-Maraghi added that these achievements would not have been possible without the strenuous and sincere efforts of employees and partners despite the huge challenges posed by the spread of the Covid-19 pandemic. He stressed that the Directorate's Groups and Teams

spared no effort to realize these achievements and keep their promise in a manner that exceeded the expectations of the Company's Higher Management. They also received great support from other Directorates in their strive to implement their plans.

An Ongoing Journey

Al-Maraghi clarified that the meeting is the right place to present best practices and exchange experiences among employees, experts, and partners. Their goal was to review the prospects of the development plan for the S&EK Directorate at all levels. These prospects are related to the challenges ahead and the provision of expertise that KOC requires.

Al-Maraghi thanked the attendees, organizers, and sponsors of the meeting. He asserted that the development journey for the Greater Burgan Field will not stop at this stage. He also revealed that there are plans to build on the steps taken by

our predecessors and enhance the skills and capabilities of the youth who will, in turn, usher KOC's journey into a new era of development.

Challenges & Achievements

Before the meeting, the CEO and his Deputies viewed the booths in the exterior areas of Ahmad Al-Jaber Exhibition, featuring various companies that cooperate with KOC, including Baker Hughes, BP, Bader Bin Ghaith, Core Lab, and SLB; which displayed some products and services.

Following this, a video that covered the early history of Burgan Field and the challenges it encountered was presented. The video also featured some solutions for overcoming these challenges, including water

production and injection. It also highlighted the fact that the Teams successfully maintained production continuity under various circumstances, especially during the restrictions imposed by the Covid-19 pandemic. It was stressed that the chief goal was to transfer experience, knowledge, and technical skills to the Company's employees and enable them to carry out their duties to the highest standards.

The speakers stressed that S&EK Directorate is keen on maintaining a healthy environment in its various operations areas, which would maintain HSSE standards for current and future generations. They also discussed the projects implemented in the Directorate – including employee services, nature reserves, and planting trees and shrubs – which are an

integral part of the Company's Strategy.

Maintenance, Projects, and Performance

Al-Maraghi then gave a presentation where he reviewed the achievements of the S&EK Directorate, highlighting the most outstanding 20 achievements in the Greater Burgan Field in the last few years. These achievements consisted of the increase in production and reserves, facilities development, integrated and comprehensive asset management, digital performance, operating GC-32, and testing injections in Warah Reservoir.

Major achievements included enhancing the production capacity of GC-20, enhancing integrated planning management processes and digital performance, and reducing the num-



ber of dormant wells and gas flaring rates.

Al-Maraghi explained that the Directorate achieved a 250,000 bpd increase in production in 2022, where output reached 1.55 million bpd, thus restoring pre-Covid 19 levels of production.

He stated that these gains were the result of a number of actions, including arrangements for maintenance and drilling, starting eight new mega projects, and enhancing performance in various fields. He pointed out that the Directorate adopted a number of new techniques like pumps with varied-frequency, and increasing the production of existing wells with the installation of many pumps.

DCEO S&EK asserted that the Directorate is applying new methods in well repair operations and injection, which contributes to increasing production in its various fields.

Initiatives

In his speech, Al-Maraghi referred to scores of initiatives carried out in his Directorate that cut costs on a number of projects and activities. This includes the Excess Water Disposal Facility, surplus water treatment capacity enhancement, well connection changes, S&EK connections, operating a number of dormant wells, and enhancing ventilation systems safety in GC-10 and 19.

Al-Maraghi also discussed the technical operations carried out by the Directorate, including new technology workshops, annual well status analyses, reservoir reviews, well performance reviews, and implementing related plans. The reviews were carried out by various Teams in



the Directorate, which worked to overcome these technical challenges.

He also discussed the additional analyses that were carried out by the Directorate. He gave a detailed explanation of the plans until 2029, explaining that the Directorate is carrying out reforms in Gathering Centers and Booster Station 1971, and installing new desalination plants in Gathering Centers (9-10-19-21).

The major challenges, as he added, are related to the delay in the separation of surface waters and implementing the water injection project. The five-year plan includes responding to the requirements of drilling operations and providing necessary materials, resources, and infrastructure to expand the Directorate's activities.

He pointed out that in the long run, drilling operations should cater to the goals of the 2040 Strategy, overcome uncertainty about reservoir performance and the requirements of water treatment to achieve the required production increase, and shifts in market supply and demand.

Honoring and Electronic Posters

A video that covered the Directorate's achievements was

shown, which included enhancing production forecasts and monthly performance, export operations management, KPC-related contracts, production performance control as compared to production targets, and early risk identification.

After honoring the meeting's organizers, the CEO and his Deputies cut a cake on the occasion of restoring production from Burgan Field to its previous levels. Then, the participants were briefed on e-posters prepared by the S&EK Directorate about the achievements realized in various fields, including lost production data management, horizontal wells design, best practices in Burgan Field, and implementing the first horizontal well in Al-Sadaa area in EK.

Some of the featured posters included topics such as: the implementation of the main infrastructure plan and associated challenges, opportunities, and recommendations; enhancing water injection performance; major maintenance works in a recovered dormant well; protecting submersible electrical pumps from sand in Gathering Center 9; and enhancing the efficiency of production through the 'Drill, Complete, and Connect' initiative. Other posters were about applying Vari-form technology to fix casings, successful vertical drilling for a

Maudud well, challenges and lessons learnt from a huge water injection project in Warah Reservoir, in addition to the successful installation of a submersible electrical pump.

The employees in charge of the aforementioned posters gave a detailed description of the ways to deal with the obstacles and challenges they encountered, the work progress, and the lessons learned. They also explained how they helped the Company by applying their experiences, ideas, and techniques.

Presentations

In the two consecutive sessions held afterwards, some employees from the Directorate gave presentations about the achievements made during the last few years and how they were able to adapt to the exceptional conditions imposed by the Covid-19 pandemic.

The presentations also covered the growing challenges and plans to mitigate their impacts as well as the difficulties involved, especially the high rise in water production in light of the limited capacity of existing facilities as well as challenges related to the reservoirs.

Al-Eidan: Continuing to invest in the human capital

CEO Ahmad Jaber Al-Eidan asserted that the Company continues to prioritize investing in the human capital, adding that KOC employees show a high degree of professionalism, development, and dedication to finding solutions to the new challenges they encounter. This allowed the Company to nurture a culture of cooperation and continuous success.

Al-Eidan stated that on the occasion of meeting with the S&EK Directorate, he would like to express his confidence in the capabilities of all employees at all levels, to promote and implement optimum technical solutions. He also expressed his thanks and appreciation for all KOC partners, who provided significant contributions, namely through sharing their experience.

He clarified that he expected the meeting to lead to best practices and recommendations which guarantee the continued development of Greater Burgan Field, thus enhancing Kuwait's position as a reliable global energy supplier.

Greater Burgan Field fares well

DCEO S&EK Eisa Al-Maraghi asserted that the Greater Burgan Field, which he compared to a pearl, is faring well, especially as the rate of production has been restored to pre-Covid 19 pandemic levels.

Al-Maraghi stated that field development, production, and maintenance in the Greater Burgan Field are an example to follow at the global level. He clarified that there is an urgent need for a new approach to deal with oil wells in Kuwait, especially after eight decades of oil extraction and the associated technical difficulties.

He commended the performance of KOC staff, pointing out that the achievements of the Directorate resulted from the tireless efforts of all employees, who he believes are the real capital of the Company and the most important asset in the course of its achievements. It is for this reason, as he added, that

they deserve all the interest and care given to them by the Company's Higher Management.

Al-Maraghi clarified that Greater Burgan Field has a great potential to increase its production capacity. However, supply chain fluctuations, the length of the documentation cycle for capital projects, and the shortage of expertise remain as the major risks and challenges faced by the Company to maintain the production capacity of this field.

Honoring Innovators and Participants

The following dedicated employees and innovators were honored on the sidelines of the meeting:

Abdallah Al-Kandari - Abdallah Al-Faga'an (Electrical Engineer - Technical Services Team) - Ahmad Najim Al-Shammari - Ayesha Al-Mutairi - Dunya Al-Jaafar - Dalal Al-Kandari - Eisa Al-Hazeem - Fahad Al-Ruwayeh - Haneen Al-Kandari - Layla Abdullah - Maryam Sourour - Mohamed Al-Sharif - Noura Al-Gloushi - Qassim Al-Abbassi.

Team Leaders and employees who contributed to organizing the meeting were also honored. These are: Mahdi Al-Qazwini (Team Leader Operations Technical Services), Noura Al-Soula (Team Leader Public Relations), Ahmad Al-Zamel (Production Excellence & Planning Team) - Maasouma Nasser (Chief Public Relations Officer) - Yousef Dashti (Public Relations Team) - Maryam Jasim - Kholoud Al-Rashidi - Mishaal Al-Ali - Rawan Al-Sawan - Najla Rmeil - Hanan Abdulrazaq.

KOC Implements New Close Proximity Radiography (CPR) Technology





Kuwait Oil Company (KOC), represented by TL Standards Fagher Al-Zalzalah and Senior Standards Engineer Mohammad Taqi, attended the conference held in Doha, Qatar from 13 to 15 November, 2023 as Primary Members of GSO TC-07 (for Oil & Gas). The Technical Committee GSO TC-07 is responsible for developing Oil & Gas Standards for GCC Countries. In the conference, KOC representative Mohammad Taqi gave a technical presentation on the topic, titled “Close Proximity Radiography” (CPR). The presentation covered the techniques, advantages, and benefits of CPR, a groundbreaking radiographic technology and procedure.

KOC Maintains its Pioneering Position

KOC constantly strives to stay up to date with state-of-the-art technologies in the oil industry, and keep pace with the latest international technological advancements, in a manner that both serves Kuwait and meets global energy demands. As such, it is always on the lookout for useful and innovative technologies, and is committed to participating in international events and conferences in this context, which allow it to exchange knowledge and best practices with global experts in this industry.

Accordingly, the Digest is keen to shed light on all that is new and beneficial for the Company.

In this article, we explore Close Proximity Radiography (CPR) – Technology, which helps avoid shutdowns, speed up operations, and cut down on costs.

KOC’s Strategic Goals

KOC’s 2040 Strategy includes the 2040 Upstream Vision and 2040 Upstream Values that comprise the following:

- **Innovation:** Developing and embracing new ideas, methods, and approaches to solve challenges in order to create value.
- **Commitment to HSSE:** Respecting the environment and ensuring safety, security, and the promotion of a healthy workplace wherever Kuwait Oil Company operates.

- This Innovation concept (CPR Technology) was accepted by KOC’s higher management as part of KOC’s Innovation framework for implementation.
- This novel method ensures the twin objectives of enhanced personal safety while also saving huge amounts of time and costs, as other activities in the vicinity need not be stopped or suspended.

Both aspects stated above are in line with KOC’s 2040 Upstream Vision and Values, as well as the KPC HSSE Policy.

GCC Standardization Organization Technical Committee -07

The Technical Committee was founded in 2007, with a maxi-



mum of five members per member country. There are seven member countries in total: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, UAE, and Yemen.

The committee's scope of work is as follows:

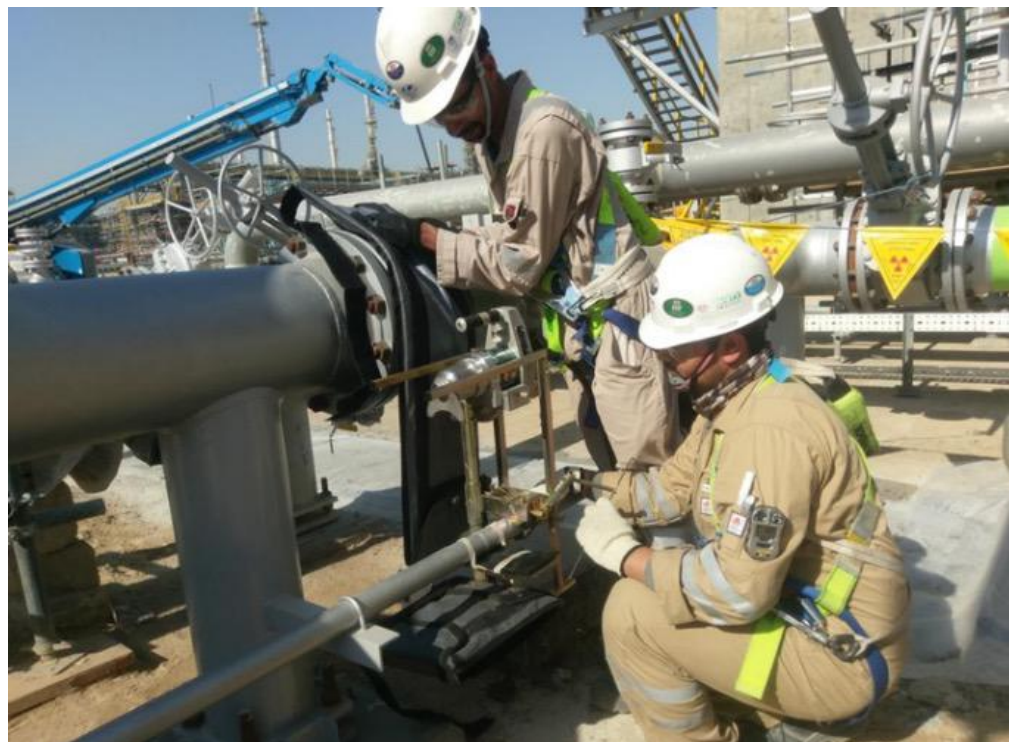
- Marine equipment, materials and structures used in the petrochemical, petroleum, natural and liquefied gas industry.
- Drilling, production and processing equipment, transportation systems and storage equipment for the oil and gas industry.
- Petroleum and natural gas products (refined products such as fuel and gas products).
- Technical terms, inspection, and testing methods.

This meeting was the 27th of its kind since 2007.

Implementing the New Technology

In line with the Task Force Recommendations, the following actions have already been implemented:

- This Novel Technology option has been incorporated in relevant KOC Standards such as KOC-MP-010, KOC-MV-007 etc. for implementation in all ongoing and upcoming projects.
- The CPR option has been included as part of SCOW (Scope of work) in the new Radiography Contract by ICT to facilitate utilization and implementation.



Current Practice

The conventional Radiographic Testing (RT) was used to validate the welds in the storage tanks, pipelines, and piping both during project execution and shutdown.

Whenever Radiography is being conducted, all other nearby activities must be suspended and the working personnel must be evacuated to a safe zone until the Radiography work is completed.

Such frequent interruptions cause schedule extensions, delays in project completion, and consequent cost escalations with considerable impact on capital expenditures (CAPEX) and radiation exposure risk.

Close Proximity Radiography (CPR) - Technology & Benefits

The CPR Technique involves utilizing the necessary Radiation energy only for the spot to be assessed utilizing low energy Radiation sources such as Selenium-75, and is hence superior

to the conventional RT methods that are currently being applied across the projects and Operating Facilities.

This technique does not require the suspension of work, or evacuation of personnel engaged in other tasks at the project sites.

Further, there is a reduction of up to 98% in the exclusion zones, allowing personnel to perform their work safely as close as 1 to 2 meters to the site.

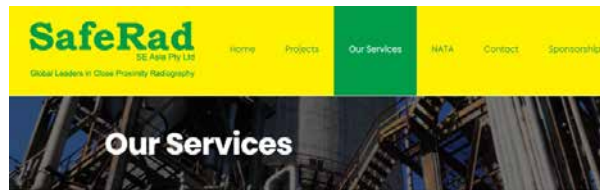
The Gammablok® Lead-Free Radiation Shielding

One of the materials used in the radiography services to protect the personnel is the GammaBlok®.

The GammaBlok® radiation shielding is a patented highly flexible high density plastic material.

It is a very effective radiation attenuating material that can be manufactured in any size, shape, or thickness to suit the user’s requirements.

GammaBlok® is lead-free, non-toxic and user friendly. It contains no toxic materials or contaminating elements, thus also allowing KOC to conduct its operations in accordance with its firm



Radiography SafeRad™ the World Leaders of Close Proximity Radiography

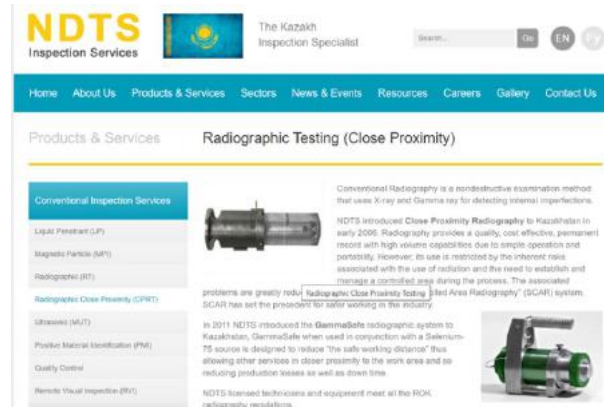
SafeRad - SafeRad Limited has established Global presence in many key markets and has set up a number of independent SafeRad business units to better support the geographically diverse customer base.

commitment to preserving the environment.

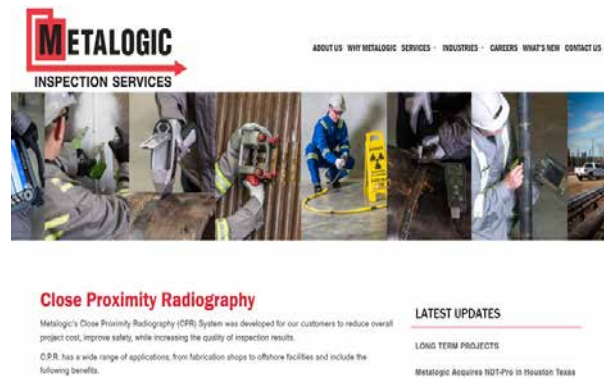
The material can be bent or folded around objects and returns to its original shape, and can be easily cut using a sharp blade. It is strong, durable, highly elastic, and long lasting.

Close Proximity Radiography (CPR) Companies

The following are a few of the companies that offer CPR services.



NDTS Inspection Services - provides a full range of Conventional and Advanced inspection, non-destructive testing, and heat treatment services.



Metalogic Inspection Services - Metalogic is a turnkey inspection company specializing in the implementation of advanced technologies including CPR to reduce overall project cost, improve safety, while increasing the quality of inspection results.



IXAR – Industrial X-Ray & Allied Radiographers (I) Pvt. Ltd or IXAR is a well-established Company in the field of Radiography, one of the Non-Destructive Testing methods.

Actions Implemented in KOC

The Company has implemented some measures to ensure that CPR is utilized and incorporated in the on-going and future projects.

The CPR option for RT has been incorporated into relevant KOC Standards, such as:

- I. "KOC Standard for Welding Procedures and Welding Quality Requirements" (KOC-MW-001)
- II. "KOC Standard for Piping Material Classes" (KOC-MP-010),
- III. "KOC Standard for Field Erected Storage Tanks" (KOC-MV-007)

The CPR option has been included in the SCOW (Scope of Work) of the New Radiography Contract.

Further, the M-PS&EG has issued an explicit recommendation to include the CPR option for Radiography for all the ongoing and future projects in KOC, to realize the simultaneous benefits of cost savings and enhanced safety.



Conclusion

To conclude, the Digest would like to highlight the following key points, ensuring that the main points are appropriately communicated with the audience.

- Radiation exposure to Radiographers and nearby personnel is drastically reduced when CPR is used.
- During CPR, there is no stoppage nor disruption of other activities.
- For steady state units, CPR can be utilized during shutdown and NO stoppage of work during Radiography.
- CPR is preferable in confined spaces or congested areas to

minimize exposure to Radiation.

- CPR is the most suitable technique that can be utilized for "In-Service" inspection like for inspecting "Dead-Legs"

The GSO TC-07 Conference Organizers congratulated the representatives from KOC, TL Standards Fakher Al-Zalzalah, and Senior Engineer Standards Mohammad Taqi, and appreciated them for sharing the invaluable knowledge, their active participation, and contributions to the Task Force. (L-R: Fakher Al-Zalzalah, Zeyad Al-Sa'adi, Ali Al-Ghamdi, Representative of GSO / Saudi Arabia, Mohammad Al-Musaifri, Ala'a Al-Naqi, Mohammad Taqi, Abeer Al-Enezi).



RAMADAN HEALTH TIPS

As the Holy Month of Ramadan approaches, the Company, in all its departments, shows much interest and dedication in spreading health tips to ensure everyone a healthy and comfortable fast.

In this article, the Digest presents a few suggestions and sheds light on important health information to keep in mind as you enter this blessed month.





Goals for Ramadan

Ramadan offers an opportunity to overcome unhealthy habits, while building newer, healthier ones. Setting goals can help result in an even more rewarding month.

While Ramadan marks an occasion to gather with loved ones and share joy, it should not be a month of excess that destroys our health. Practicing self-restraint and self-discipline are cornerstones of the Holy Month.

Daily Tips:

Movement

Exercise daily or almost daily during Ramadan, depending on the time that suits you.

It is not recommended to exercise while fasting for some people who suffer from chronic diseases, and it is not recommended to exercise vigorously during the first hours of fasting.

Drinks in Ramadan

Avoid consuming sweetened artificial juices that contain a high amount of sugar, as they

do not provide any nutritional value, and therefore it is better to replace them with water and fresh laban.

Caffeine in Ramadan

It is best to avoid caffeine during Ramadan, because excessive drinking may raise blood pressure and cause loss of fluids from the body.

Water intake in Ramadan

It is a common mistake to drink water in large quantities during Iftar and Suhoor, and therefore it is best to distribute drinking water in moderate quantities during the Iftar and Suhoor periods, at an amount of 200 ml every hour and a half.

Specifications of a healthy Suhoor

- Have it closer to the Athaan.
- Drink moderate fluids.
- Eat food that is full of fiber and rich in protein.
- Consume less salt and spices.

Desserts in Ramadan

Try to control the amount of Ramadan sweets you eat, because most of them are high in calories, sugar, and fat.

Be particularly cautious if you have diabetes.

Sleeping in Ramadan

Make sure you get enough sleep, especially at night.

Fruits in Ramadan

Make sure to eat one or two types of fruit to avoid digestive issues.

Ramadan is an opportunity to stop smoking

Therefore, take advantage of the month of Ramadan to quit smoking.

Healthy Suhoor Meal

Make sure to eat Suhoor, even if it is a small amount. As the Prophet, Peace Be Upon Him, says: "Take Suhoor as there is a blessing in it."

Benefits of Healthy Suhoor in Ramadan

- Maintains a healthy blood sugar level.
- Provides the body with the appropriate energy for fasting.
- Supports digestive health.
- Prevents headaches.
- Prevents feelings of laziness and lethargy.

Headaches in Ramadan

Suddenly stopping caffeine intake and smoking may cause headaches during the fasting period.

Headaches can be avoided by:

- Gradually reducing daily consumption of caffeine and smoking.
- Avoiding mental and physical stress.
- Following a healthy diet.
- Drinking enough fluids.
- Getting enough sleep.
- Exercising regularly.

Benefits of dates:

- Dates contain phosphorus and vitamins.
- Strengthen the immune system.
- Treat anemia, as they contain iron.
- Maintain body balance.
- Provide the body with vitality and energy.
- Dates are the best way to start your Iftar, as they contain minerals, fiber, and natural sugars that provide you with energy.

Drinking water during Suhoor is important.

- It is even more important to drink it throughout the period of breaking your fast.
- Tip: A cup of water every two hours from Iftar until Suhoor.

To avoid feeling thirsty during Ramadan:

- Reduce your intake of caffeinated drinks.
- Reduce your intake of table salt.
- Reduce your meat intake.

For those with chronic illnesses

It is important for those with chronic illnesses to follow their doctor's advice when it comes to fasting, whether this includes abstaining from fasting entirely to avoid health risks, or perhaps simply adjusting the timings of their prescribed medications accordingly.

For those who are advised not to fast at all, it is suggested to engage in charity efforts and double their other good deeds, to still be able to participate in this Holy Month.

Patients with chronic conditions who want to fast during Ramadan should be individually assessed to determine whether fasting is safe. The International Diabetes Federation and the Diabetes and Ramadan International Alliance provide a structured, traffic-light system for managing diabetes mellitus during Ramadan.

Patients may be categorized as low to moderate risk, with no clear contraindications to fasting, but perhaps need general advice about aspects of fasting, including sick day rules or ensuring adequate nutrition and fluid intake during non-fasting hours. Patients who are at risk should be advised not to fast.

Ramadan fasting is an individualized choice, with medical exemptions and other dispensations. In general, daily consecutive fasting for the entire month is not a binary decision, and patients may fast intermittently if their health permits it. Some may fast later in the year, when fewer hours of daylight and an agreeable climate make fasting easier.



AHMADI SPORTS DAY

Ahmadi Sports Day, which was first held in March 1974, is an athletic event that the Kuwaiti community would eagerly anticipate in March of every year.

KOC would organize the Ahmadi Sports Day on what was then called the Sand Playgrounds, which the Company opened in 1962.





The Sports Day included many competitions in cricket, rugby, baseball, and other sports. During special occasions, the Company would rent a tent to VIP visitors, along with some scattered small tents. However, interest in this day declined somewhat with the passage of time, as the Company's responsibilities and activities increased.

As a result of this decline in interest, the sports day lacked proper organization; as cars, for example, would stop wherever they were, exposing stadium goers to danger.

This continued until 1990, when the State of Kuwait was subjected to a brutal invasion, which caused great destruction to stadium facilities.

The playing fields remained almost empty, and only the cricket field and some scattered areas for playing hockey and football remained standing.

A few years ago, the Company sought to revive this day again, after it had been suspended for many years. It also worked to add it to a number of sporting activities and events that the Company sponsors or organizes throughout the year.

In this context, it rehabilitated the space; reopening Ahmadi Park with a new and modernized look, and establishing playgrounds for various games. Today, it revives the spark of Ahmadi Sports Day by organizing competitions in many games, including football, basketball, tennis, cricket, rugby, and more.

The Event

Under the patronage and in the presence of KOC CEO Ahmad Jaber Al-Eidan, the Company held the Ahmadi Sports Day activities over three days, hosted by the Ahmadi Park stadiums and recreational facilities.

The closing day activities were attended by DCEO Planning & Innovation Eisa Al-Maraghi, Manager PR&I Mohammed Al-Basry, and a number of KOC officials. Representatives of the event's sponsors and contributors, a crowd of families of the Company's employees, and residents of Ahmadi and other governorates of Kuwait also attended, eagerly following the Sports Day competitions from the moment they started until the hour they closed.



In his speech on the occasion, CEO Al-Eidan thanked those behind Ahmadi Sports Day, administrative supervisors, sponsors, and shareholders; praising their efforts “that resulted in this remarkable success of the event, and earned it this massive attendance.”

Al-Eidan stated, “Ahmadi Sports Day, which was launched half a century ago today (1974), has become one of the most prominent sporting events that Kuwaitis await annually with passion and enthusiasm.”

He stressed that the reason behind the continuation and success of this sports day, and other social events, is “The great interest that KOC has shown, since its inception, in the social and recreational activities

and events hosted by Ahmadi Governorate’s facilities; and the country’s people generally benefit from them and participate in bringing them to life.”

In turn, Manager PR&I in the Company Mohammed Al-Basry thanked the event’s spon-

sors, contributors, and supervisors; stressing that “their sincere work and constructive efforts resulted in the great success of the Ahmadi Sports Day activities, and gave it an honorable image, of which KOC and all its employees are proud.”



Many entities and Teams participated in the event's activities and entertainment and sports challenges, and its competitions. They continued for three days, offering participants much excitement and amusement. Children's performances added further excitement, especially the optical illusions segments with Abdul Latif Al Saleh. The Kuwaiti Army Brass Band also had a prominent presence, presenting the audience with the most beautiful pieces of music, in addition to the military musical show, which the audience accompanied with chants and shouts of joy.

In turn, the Television Folklore Band revived the audi-



ence's memory with a number of old folk songs, which beautifully paid tribute to our rich heritage. Yemeni Hadhramaut Band performed impressive pieces of Adani and Hadrami music, and the Kuwaiti Al-Wadi Band also presented exciting pieces of the

Ardha arts and authentic Kuwaiti heritage. The children enjoyed a large variety of entertainment competitions held in the "Burgano Village" that is designated for young people.

At the conclusion of the event, a

prize draw was held for the attendees, then the CEO honored the winning teams in the group and individual games, and handed them cups and prizes. He bid them and the Ahmadi Sports Day attendees farewell, hoping to meet with them next year.

الإسم: أبو القاسم بن عباس الزهراوي.

اللقب: الزهراوي.

تاريخ الميلاد: ٩٣٦م.

مكان الميلاد: الزهراء في الأندلس.

المكانة العلمية: أشهر جراح مسلم في العصور

الوسهي فهو "أبو جراحة".



الزهراوي

Abu Al-Qasim Al-Zahrawi: The Father of Operative Surgery

In this article we explore the influential work of Abu Al-Qasim Al-Zahrawi, (Latin: Albucasis), born c. 936, near Córdoba [Spain]—died c. 1013, medieval surgeon of Andalusian Spain, whose comprehensive medical text, combining Middle Eastern and Greco-Roman classical teachings, shaped European surgical procedures until the Renaissance. For this reason, he is lauded in history as The Father of Surgery.

Preceding the West

Islamic history is rich with scientists, scholars, and intellectuals of all kinds; who devoted their lives to paving the way for many significant developments in various fields and disciplines, without which the Western Renaissance would have not been possible.

Despite this, many are unaware of the extent of these brilliant minds' roles in shap-

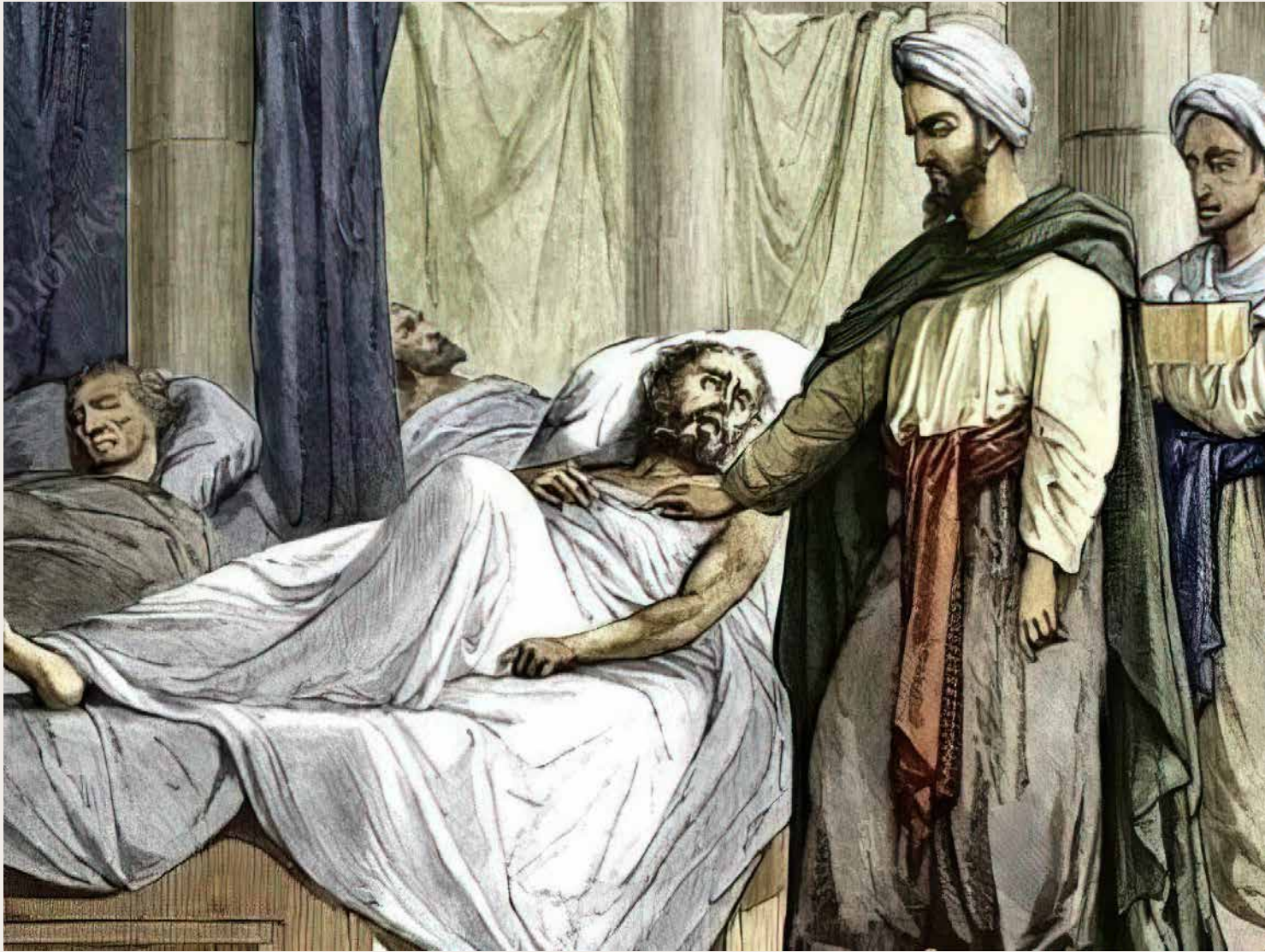
ing the world we know today, and in this particular case, we continue to apply in modern medicine.

For this reason, The Digest sheds light on one such prominent and influential scientist; Abu Al Qasim Al Zahrawi, whose medical writings were highly regarded in the West particularly after being translated by Gerard of Cremona, Rogerius Frugardi, Ronaldus Parmensis and others. His surgical teachings were the most

advanced in the Middle Ages until the thirteenth century.

Biography

Al-Zahrawi's ancestors hailed from the Al Ansar tribes of Al Medina Al Munawwarah who came from the Arabian Peninsula with the Muslim armies that conquered and lived in Spain. Al-Zahrawi traveled rarely, and spent most of his life in his hometown as a practicing physician-pharmacist-surgeon.



He served as the court physician to Caliph Al-Hakam-II, at a period considered as the “Golden Age” of Arab Spain when natural and mathematical sciences reached their peak. After a long and distinguished medical career, he died in 1013 AD at the age of 77.

Life's Work

Around the year 1000 AD, Al-Zahrawi wrote his renowned book “Al Tasreef Liman ‘Ajaz ‘Aan Al-Taleef”, (The Clearance of Medical Science For Those Who Can Not Compile It). It was a summation of about fifty years of medical education, training, practice, and experience. The thirty volumes of the medical en-

cyclopedia covered various aspects of medical knowledge. In addition to sections on medicine and surgery, there were sections on midwifery, pharmacology, therapeutics, dietetics, psychotherapy, weights and measures, and medical chemistry.

Al-Tasreef was an essential component of the medical curriculum in European countries for many centuries. The famous French surgeon Guy de Chauliac (1300–1368) quoted him over 200 times in his book, appended its Latin edition to his own book on surgery. Several editions of this book (surgical chapters) were published, including one at Venice (1497), Basel (1541) and Oxford (1778).

Surgical Innovations

In Al-Tasreef, three chapters were devoted to surgery. Some of the procedures and techniques detailed in these chapters include the following:

- Surgery of the eye, ear, and throat. He fully described tonsillectomy and tracheostomy.
- He devised instruments for internal examination of the ear.
- He devised an instrument used to remove or insert objects into the throat.
- He described how to use a hook to remove a polyp from the nose.
- He described the exposure

The Father of Operative Surgery

Al Zahrawi is considered the father of operative surgery. He is credited with performance of the first thyroidectomy. The last chapter of his comprehensive book, named "On Surgery", was dedicated to surgical instruments. He introduced over 200 surgical tools, a staggering number by all standards. He gave detailed descriptions of using probes, surgical knives, scalpels, and hooks. He also devised and invented surgical scissors, grasping forceps and obstetrical forceps. His illustrations of surgical instruments were the earliest intended for use in teaching and in methods of manufacturing them.

In addition, Al Zahrawi made significant contributions to pediatric surgery. Along with his description of hydrocephalus, he described harelip, adenoids, ranula, imperforated external urinary meatus, perforated anus, hermaphrodites, gynecomastia, supernumerary and webbed fingers. He was the first to describe in detail the medical aspects of hemophilia.

A pioneer in every sense

Finally, he emphasized child education and behavior, school curriculum, and academic specialization. He advised that gifted and intelligent students be encouraged to study medicine after completing their primary education in language, grammar, mathematics, astronomy, and philosophy.

This article is but a glimpse of the medical and surgical contributions of this great Arab physician from Andalus to the world.



- and division of the temporal artery to relieve certain types of headaches.
- He utilized cauterization, usually to treat skin tumors or open abscesses. He applied the cauterization procedure to as many as 50 different operations.
- Application of ligature for bleeding vessels and internal stitching utilizing catgut. He preceded the famous French military surgeon Ambroise Pare (1510–1590), claimed to be the first European to utilize sutures, by five centuries.
- Treatment for anal fistulas.
- Setting dislocated bones and fractures. His method for setting and reducing a dislocated

- shoulder came centuries before Kocher introduced his similar technique to European medicine.
- Removal of urinary bladder calculi. He advised that the treating physician has to insert a finger into the rectum of the patient, move the stone down to the neck of the bladder, then make an incision in the rectal wall or the perineum and remove the stone.
- He devised instruments for inspection of the urethra.
- He is credited to be the first to describe ectopic pregnancy.
- He devised several dental devices and artificial teeth made of animal bones.

Kuwait Purebred Arabian Horses Show (KPAHS)

The Digest is dedicated to spotlighting interesting facets of the Arabian Peninsula's history, as well as Kuwait's lesser-known initiatives run by passionate people in different fields.

In this article, we spotlight the Kuwait Purebred Arabian Horses Show, where a number of dedicated individuals displayed the beautiful, fascinating Arabian Horse that's long been part of the region's heritage. The show took place earlier this year, with a huge turnout and success.

Photos are courtesy of Bait Al Arab



A Brief History

Named for its origin in the Arabian Peninsula of the Middle East, the Arabian horse was refined by the migratory Bedouin people over thousands of years. Bred to be swift, loyal, and elegant, these horses influenced nearly all of the breeds of horses that we have today.

The Bedouin tribes began selectively breeding horses in arid desert conditions around 5,000 years ago. Only the strongest horses could adapt to such an extreme climate, and the result was a prized equine companion with an elegant and refined appearance, large lung capacity, and a strong, compact body. These horses could swiftly carry riders over thousands of miles of desert, and they are still known for that lasting endurance today.

The Bedouin tribes maintained pure bloodlines by meticulously passing down breeding records orally through generations, and by naming their horses with suffixes of “son” and “daughter”. Mixing bloodlines with other desert breeds was forbidden – Arabians were to remain “asil” (pure).

Arabians were exceptionally valuable to the Bedouins. A good mare used for war was priceless – she would never be sold, but only given as a precious gift.

As chivalry gained traction in Europe in the Middle Ages, the Middle East had its own version: “furusiyya”. Furusiyya is the historical Arabic term for equestrian martial exercise in the 10th-15th centuries.



Characteristics

Arabian horses are relatively small, standing between 14.1 and 15.2 hands tall. They generally weigh between 800 and 1000 pounds. Smaller horses consume fewer resources, which is essential for survival in a harsh desert climate. They also have dense bones, which enables them to carry heavier loads than other light horses.

Several specific characteristics define the Arabian breed:

- **Head:** Arabians have delicate, refined heads that are preferably marked by a distinctive “dished” profile – the area between the forehead and the nose is slightly concave. They have large eyes, wide foreheads, small muzzles, and large nostrils.
- **Neck:** Their necks are long and arched, giving them an elegant and graceful appearance.

- **Back:** Arabians have short backs – in fact, many of them are missing vertebrae. Having a short back allows a horse to draw power from its hindquarters and puts a spring in its step.
- **Croup:** Relatively broad and flat croup; this also allows the horse to draw power from the hindquarters and provides a smooth ride.
- **Tail:** Arabians have a naturally high tail carriage, giving them a proud look at all times.

High Significance in Kuwait

Arabian horses have a long history and high importance in Kuwait, where all Amirs own horses, and the Amiri Diwan has over fifty of them.

The Arabian horse is part of the Arab world’s history and tradition, and in Kuwait in particular it is considered the Arabs’ duty



and responsibility to preserve the breed and to further its importance worldwide. During the last forty years, the Kuwait Arabian Horse Center (Bayt Al Arab), which is owned by the Amiri Diwan, has taken a key interest in breeding purebred Arabian horses, and particularly concentrating on so-called Straight Egyptian bloodlines as a nucleus to preserve their heritage in Kuwait.

Kuwait has always served as the gateway to the Middle East because of its geographical location, and was used as the main harbor to ship Arabian horses that were purchased from the Arab tribes to India, to be used among other purposes also for racing in Bombay and for the British Army.

Kuwait Purebred Arabian Horse Show (KPAHS)

The Kuwait Purebred Arabian Horse Show (KPAHS) launched first in 2022, making history with the highest registration (446 horses) and prize awards in Kuwait.

In 2023, the show and the festival altogether expanded, featuring Straight Egyptian & Purebred Arabian Horses with 443 registrations and introducing the first Arabian Horse Auction in Kuwait.

Now, in 2024, the festival reaches new heights, showcasing both Arabian horse types and concluding with an unforgettable Arabian Horse Auction.

This year's show was held over the course of four days in January, at Bayt Al Arab in Subhan, which is owned by the Amiri Diwan. Six months

of preparation were devoted to this show. A presentation of the horses is also being planned in Ramadan.

A livestream presentation of the horses is regularly shown on the Arabian Essence TV Application that is dedicated to the aforementioned breed. It is worth noting that January's show garnered 300,000 viewers.

International Interest

Numerous shows are held across the globe to present this beautiful animal, amounting to over thirty, in which Kuwait actively participates with award winning horses. These include the World Equestrian Festival (CHIO Aachen) in Germany, Katara International Arabian Horse Festival (KIAHF) in Qatar, Sharjah International Arabian Horse Festival in UAE, the European Championships for Arabian Horses (ECPAH), Poland's Sopot Arabian Horse Show, Prague's INTERCUP - International Arabian Horse Show, and the Dirab Show in Saudi Arabia, to name a few.

The horses must be registered in WAHO, the World Arabian Horse Organization, and be over six months old.

World Arabian Horse Organization

WAHO, founded in 1970, has five basic objectives:

- To preserve, improve, and maintain the purity of the blood of horses of the Arabian breed, and promote public interest in the science of breeding Arabian horses.
- To promote and facilitate the acquisition and distribution of knowledge in all countries of the history, care, and treatment of horses of the Arabian breed.
- To advise and coordinate the policies and activities of Members of the Organization.
- To cooperate with any person or body of persons domiciled throughout the world in an endeavor to promote uniformity in terminology, definitions, and procedures relative to the Arabian horses breed.
- To act in a consultative capacity in discussion and negotiation with International, National, and other authorities on matters concerning horses of the Arabian breed.



The 25th Edition of the CEO Award

This year's twenty-fifth edition of the CEO Award for Health, Safety, Security and the Environment, which was supervised by the HSE Group, was distinguished by a large attendance and active participation in the nominations for its various categories. Over the years, it has become a tradition that attracts much attention from all KOC Directorates.



KOC CEO 25 HSSE AWARD
BUILDING A SAFE ENVIRONMENT



This is because it establishes a cooperative work style within one Team and among different ones, inspires a competitive spirit in different Groups and Teams, and builds motivation among employees to achieve the Company's strategy.

The competition showcases the extent to which employees' skills have developed to highlight their achievements in the HSSE field, in accordance with the Company's strategy regarding developing, its workforce supporting and encouraging competencies, and providing all necessary requirements to raise health and safety levels and maintain a clean Kuwaiti environment.

The ceremony was held under the patronage and in the presence of the CEO, Ahmad Jaber Al-Eidan, under the slogan "Building a Safe Environment," at the Grand Hyatt Hotel in 360 Mall. It was attended by a number of Deputy CEOs, Group Managers, Team Leaders, members of the Award's Steering Committee and subcommittees, and representatives of the

Ministry of Health, the Ministry of Interior, the Ministry of Defense, the National Guard, the Environment Public Authority, the United Nations Human Settlements Programme, and a host of employees and concerned parties.

The CEO gave a speech in which he welcomed the attendees, stressing the Company's keenness to continue presenting the Award out of its belief in its importance and the intrinsic values it represents, which the Company has devotedly followed and worked on to preserve HSSE.

He stressed that environmental challenges, whether presently or in the future, have become a global focus, which has compelled the State of Kuwait to take major steps in the field of sustainability. As such, it signed the Paris Climate Agreement and set a national goal to reduce carbon emissions by 2050 at the level of the oil sector, and 2060 at the national level, because implementing this national commitment is at the forefront of the oil sector's responsibilities.

He added that the Company, aware of its responsibility as a major supplier of oil and gas in the world, has developed an Energy Transformation Roadmap based on implementing initiatives that aim to reduce carbon emissions and invest in alternative energy in oil and gas production operations. It has also begun planning a blue hydrogen production project with the aim of increasing the share of clean energy in its operations.

Al-Eidan pointed out that the Company successfully maintained its outstanding performance last year through the commitment of employees and contractors, and the support of its leadership and Higher Management, despite the challenges it faces due to the expansion in the number of facilities and drilling rigs to cover operations throughout the State of Kuwait. He stressed that the safety and security of employees, contractors, and the surrounding environment is one of the Company's major priorities, and one of the greatest responsibilities placed on everyone's shoulders. Thus, the Company worked

to launch a series of initiatives that contribute to maintaining the safety and security of employees, contractors, society, and the environment.

Al-Eidan cited examples of a series of achievements made in light of some challenges related to maintaining production rates and raising the production and operational capacity of various assets, leading to achieving the goals of the 2040 Strategy. He touched on the Company's initiatives to achieve carbon neutrality for the State of Kuwait, in which it plays a pivotal role. He also expressed his pride in reducing the gas flaring rate in the past two years to less than half a percent (0.5%), which enhances the journey towards achieving goals through commitment to environmental pledges.

Concluding his speech, Al-Eidan thanked everyone who contributed to the achievements and helped improve the work environment and culture, including employees and contractors, and expressed his ambition to continue working towards further success within the framework of the Company's strategy and future vision. He praised those who organized the award ceremony, expressing

deep gratitude for their efforts and dedication.

The Chairman of the Award's Supreme Committee, Manager HSE Group Shamlan Al-Roumi, gave a speech in which he stated that KOC considers creating a safe environment to be a main strategic objective and a priority for achieving sustainable development, adding that the Company believes that strong HSSE performance is an integral part of the effective and profitable business management process. He explained that the organizing committee chose the slogan "Building a Safe Environment" this year by implementing a number of measures and procedures that contribute to achieving this goal.

Al-Roumi pointed out that the Company constantly exceeds the goals of the gas flaring reduction plan, as it was able to reduce the percentage to less than half a percent (0.5) for the second year in a row. This result reaffirms the Company's dedication to reducing greenhouse gas emissions and creating a safe and healthy environment, supported by an energy transition plan that focuses on reducing hydrocarbon emissions and investing



Supreme Project - Khafji Pipeline

- Painting



in alternative energy. He added that the Company worked to integrate car accidents into the Geographic Information System to record all accidents in Ahmadi within a unified interface, ensuring efficient analysis and taking the necessary corrective measures.

He added that within the framework of the Kuwait Environmental Remediation Program (KERP), KOC has committed to using 10% of energy from renewable sources, and reusing 30% of water, in addition to organizing many HSSE related awareness campaigns and influential programs. Al-Roumi stressed that the success of the Company's efforts is due to the cooperation and collective sense of responsibility demonstrated by the Company's employees and contractors.

Regarding the statistics of the award's latest edition, Al-Roumi stated that 358 applications were received to participate in the seven categories of the award. These include Health, Safety, Security, and the Environment, Awareness in the HSSE field, Contractor Performance in HSSE, and the participation of youth and children through drawing and writing articles.

To conclude his speech, Al-Roumi expressed his best wishes and congratulations to everyone who devoted their efforts to the success of the Company's performance in the HSSE field, which helped it maintain high standards, achieve excellence in operations, and enhance a safe environment.

The awards distribution for the twenty-fifth edition followed, where the S&EK Directorate won the award for the Directorate with the Highest Nominations. The "Supreme Project" was then announced, which aims to inaugurate the new 12-inch link from the 12-inch Khafji Pipeline to the 30-inch feeder in North Kuwait, providing liquefied petroleum gas to KNPC. Following this, the winning projects were announced.

At the conclusion of the ceremony, the CEO and the Chairman of the Organizing Committee distributed plaques of appreciation to the representatives of the ministries and entities that contributed to the Company's HSSE projects, and to the winning teams in the various categories of the award. The win-

ners of the youth and children's competitions were also awarded, before they expressed gratitude to the members of the main committee and the award's sub-committees, and everyone who contributed to the success of the ceremony.

The Winning Projects

Supreme Project - Khafji Pipeline

The Team that supervised the project was led by TL Gas Maintenance (S&EK) Yousef Al-Ajmi, with the participation of TL Consumers Networks Ghazi Al-Osaimi, TL Gas Operations Team (N&WK) Talal Al-Otaibi, Planning Coordinator Zahraa Al-Ashwak, and TL Maint. Support & Reliability (S&EK) Nasser Al-Hajri. They inaugurated a new 12-inch diameter link from the Khafji pipeline to the North Kuwait gas export line, which supplies KNPC with liquefied petroleum gas. The project led to maintaining the goals of gas flaring operations within the permissible limits by redirecting sweet gas and condensate to the existing gas export pipeline, and achieving an increase in gas production by 30 million cubic meters and 5 thousand barrels of gas per day. The short period it took to implement the project proves excellence, commitment, and great HSE efforts, all of which contributed to enhancing the Company's reputation and achieving its strategic goals.

Safe Cyberspace

In cooperation with the Ministry of Interior, KOC's Information Team organized an awareness campaign on cyberbullying, under the slogan "A safe cyberspace for our children". It was held in the Avenues and 360 malls, aiming to shed light on cyberbullying and explain it to



parents and children. It included a series of events in which video clips were presented in cooperation with the Ministry of Information, where the campaign organizers explained different types of bullying and how to respond to them. It was met with much praise and appreciation from official authorities and the public. TL Information Bedor Sayed Omar supervised the campaign, in which Yousef Al-Kandari, Muneera Al-Mutawa, and Abdullah Al-Jadi participated.

Fitness

The Fitness Program for Obese Children aimed to provide comprehensive training and improve the health and fitness of children who visit Ahmadi Hospital's nutrition clinics. This is carried out by a multidisciplinary team that closely follows up and monitors them. At the end of the program, participants successfully reduced their weight by 10%, and learned how to create a daily eating plan, eat healthy food in and outside of school, and exercise regularly to achieve long-term health benefits. The program

was supervised by Iman Al-Wasis, Dr. Abbas Abdel-Al, Hani Al-Hammadi, Ghadeer Al-Azmi, and Amani Yaqoub.

Vaccination Campaign

A team from the Preventive Medicine Services Team at Ahmadi Specialized Hospital (Southwell) implemented a successful vaccination campaign to combat the Human Papilloma Virus (HPV), targeting employees of the Company and the oil sector and their families. It is noteworthy that the Company preceded the Ministry of Health in providing this vaccine.

The Human Papillomavirus vaccine effectively prevents infections, diseases, and cancers in men and women alike. The vaccine has also helped reduce hospitalization, treatment costs, and absences from work, thus saving the Company many resources. The campaign's implementation was supervised by Dr. Dhabiya Al-Ajmi, Dr. Ahmed Malik, Fatima Karam, Maryam Al-Azmi, and Jassama Korian.

Al-Sadu Street: An icon of Kuwaiti Heritage



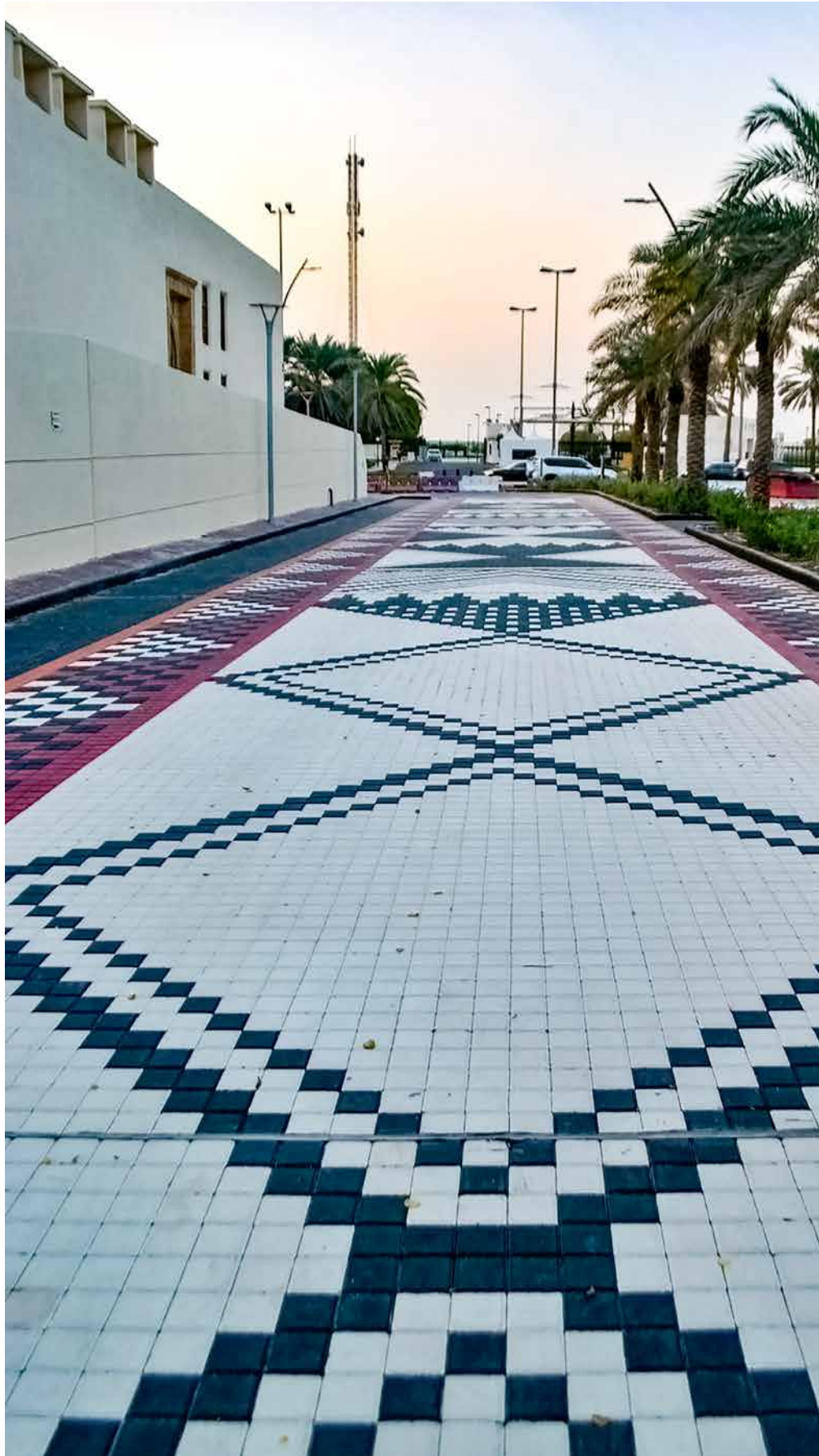
- The project documents strenuous, continuous work that lasted for years and was implemented over the course of six months.
- The Street's engravings and symbols are inspired by traditional 'Sadu' pieces, with a contemporary and innovative touch.
- Kuwait is keen on preserving the handicrafts of its ancestors.
- Most artisans inherit their craft from their predecessors and pass it on to their children.

Devoted and innovative Kuwaiti artisans were able to blend the vitality of modern art with the authenticity of our national heritage, which culminated with a unique result. The resulting products are artifacts that keep pace with the changes of the times. They were born at the core of authentic Kuwaiti heritage, embodying the national identity in a creative and sustainable manner. Al-Sadu Street was a long anticipated project that has finally come to life as an eye-catching sight, in the heart of the Al-Qibla cultural area.

Al-Sadu Society announced that, after the inauguration of the Street in October 2023, the project - which was implemented with the support of our political leadership over the course of six months - documents strenuous efforts that lasted for years, during which the Society sought to preserve this handicraft, develop it, and pass it onto future generations.

A Modern Landmark

The Society explained that the Street, which was created for passers-by, aims to document and modernize cultural heri-





tage as a starting point for creativity and innovation. In this manner, the Society successfully helped to develop this craft and preserve its spirit. It was also pointed out that the location of the Street was chosen meticulously to feature cultural centers and be a significant addition to this culturally rich area.

The Street's engravings and symbols were inspired by traditional Sadu pieces from the Society's collection, to form a modern landmark inspired by tradition. The graphic designs carefully take the specificity of the cultural heritage, its values, arts, and traditions into consid-

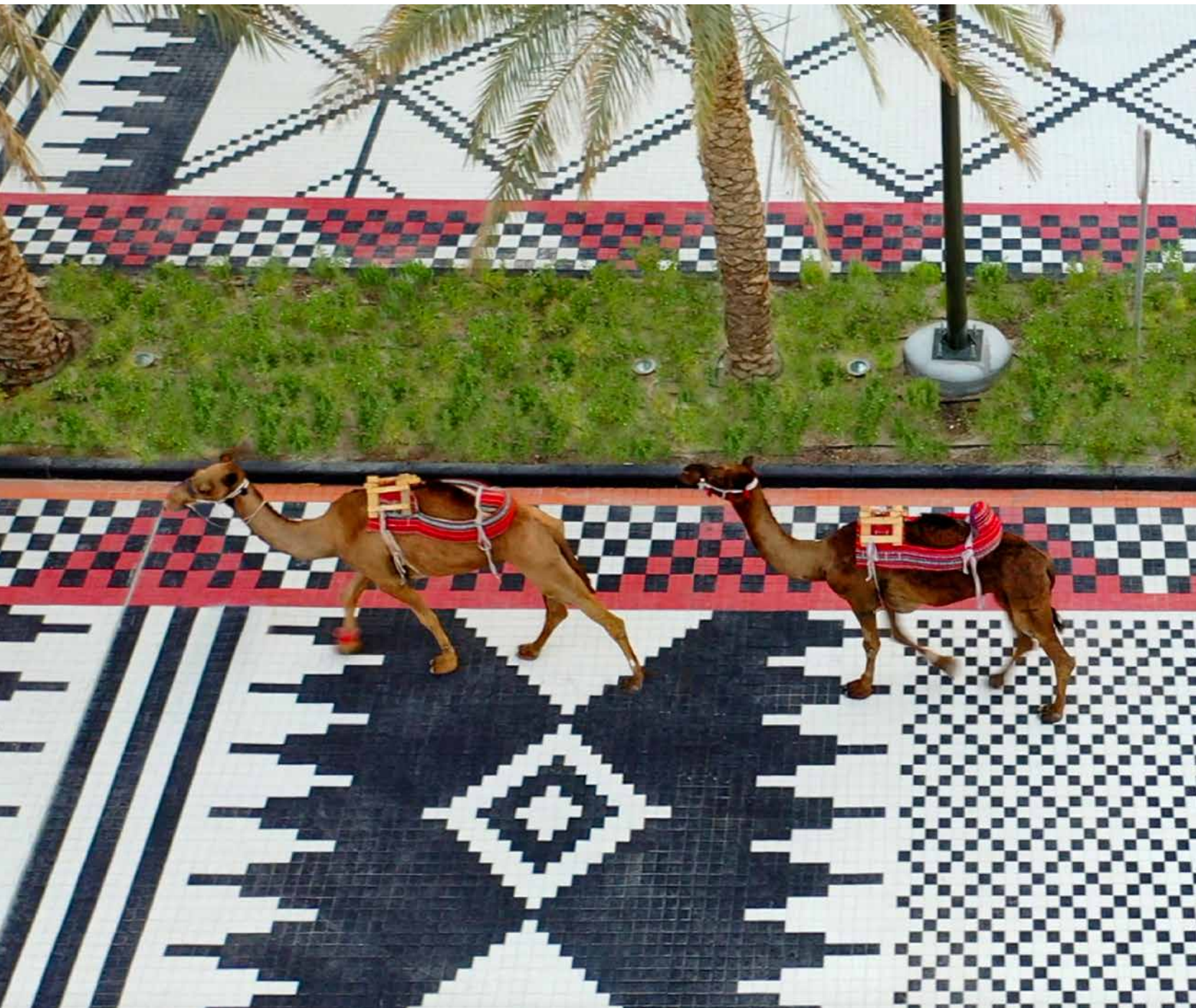
eration; which can serve modern creative development.

The Society also explained that graphic structures were created for the Street by making Sadu engravings that are compatible with the size and form of the tiles used for the project, which was implemented between March and September 2023. Additionally, multi-purpose Kuwaiti tiles were used, whose colors were compatible with Sadu patterns. One hundred and ninety thousand Kuwaiti-made tiles were used. Kuwaiti female engineers from the Ministry of Public Works (MPW) and the Ministry of Electricity and Water and Renewable En-

ergy (MEW) contributed to this project under the supervision of Al-Sadu Society.

The Society expresses its sincere thanks and acknowledgement to the political leadership for their support and encouragement in the implementation of this culturally significant project. It also highly appreciates the collaboration with contributing government authorities, including the Ministry of Public Works, the Ministry of Electricity and Water and Renewable Energy, the Ministry of Information, the Ministry of Interior, and the Public Authority for Roads and Transportation.





Scores of Handicrafts

Kuwaitis are keen on preserving their heritage and passing it on to future generations. To achieve this goal, they receive support from concerned authorities, who provide artisans with the necessary encouragement, as well as moral and material support they need to fulfill their work to the highest standards.

Most Kuwaiti handicraft workers inherit this passion from their parents and grandparents and, in turn, pass it on to their children; continuing to modernize it without compromising its traditional character or originality.

Kuwait has scores of traditional crafts including, for example: wooden ship build-

ing, porcelain making, tailoring men's 'Bishts', women's 'Abayas' and 'Jazadine' (purses), perfume mixing, and goldsmithing; in addition to pottery, bamboo, and rosary industries, as well as other crafts that maintain their authenticity in the face of rapid technological advancements.



Kuwait Oil Tankers

1974



إحدى شركات مؤسسة البترول الكويتية
A Subsidiary of Kuwait Petroleum Corporation