This document is intended to provide our stakeholders with further information regarding our drilling, completions and hydraulic fracturing practices and water usage.

Question No.	Category	Disclosure Reference/Response
01	Well Evaluation	All wells are required by federal and state regulatory agencies to design casing and cementing plans to protect groundwater. Before drilling any well, Occidental conducts extensive geologic research to investigate the depth and lateral extent of any fresh groundwater. We apply applicable American Petroleum Institute (API) specifications and comply with all required regulations. Regulatory agencies then review and approve all plans and casing designs. Occidental selects well completion or stimulation techniques, including for hydraulic fracturing, based on the characteristics of the reservoir rock. Occidental's first priority is to maintain asset integrity at both surface facilities and wells. We employ rigorous, industry-proven specifications to test the casings of both vertical and horizontal oil and gas wells. The testing of well integrity and safety involve multiple phases throughout the lifecycle of the well. Occidental employs a unified information system that provides the operational data needed for the day-to-day activities of production operations, well analysts and production rates, pressure, maintenance logs and exception, in-depth data analytics and early response to identified anomalies. See also: www.oxy.com/OurBusinesses/OilandGas/Technology/Field-
02	Well Integrity	 Development/Pages/Well-Construction.aspx Well integrity and groundwater protection is provided with multiple layers of steel casing, cemented in place, which isolate the well from surrounding water-bearing zones. Casing design variables include length, thickness, tensile strength and composition for a given reservoir and rock formation. The cementation of the casing and proper sealing of annular spaces creates a hydraulic barrier to both vertical and horizontal fluid migration, thus protecting water resources. Two or more layers of casing are required in order to provide redundancy and protect water resources. Well casing design parameters are summarized below: Surface casing reaches beyond fresh groundwater zones and are fully cemented —this isolates and creates a physical barrier between the materials in the well and any strata of freshwater zones, preventing a threat to freshwater bodies. Inside the surface casing, a second casing is installed and cement is added between the casings. All cementing work is monitored. The volume of cement pumped and temperature are controlled and monitored to ensure the cement barrier is in-place to prevent any fluids migration. At the production casing or the well completion stage, during which fracturing may be performed, Occidental installs production casing or strings (also known as a third casing) in the production zone.
		In addition, mechanical integrity testing is performed on a prescribed schedule for both injection and inactive wells, as required by regulation in Texas and New Mexico. Spills that exceed a Reportable Quantity (RQ) are reported into Occidental's enterprise HES incident recording and action tracking system. In 2018, there were no (zero) RQ releases resulting from well-integrity failures.
03	Near Misses	Occidental records in its enterprise Health, Environment and Safety (HES) incident recording and action tracking system a wide spectrum of incidents, including Near Miss Incidents on routine basis: Environmental, Process Risk/Process Control, Property Damage, Safety /Industrial Hygiene, and Transportation/Vehicle. Near Miss Incidents are also classified

		 according to severity, as per Occidental's procedures. The combinations of both provide a degree of specificity to allow root cause analysis and corrective action implementation. All spills, fires, and other incidents are recorded and tracked internally. Any event, including near misses that could have led to an injury or a potentially significant incident is also recorded and evaluated for root cause and corrective actions are identified and implemented, as
		appropriate. Near miss and actual incidents are also tracked as part of our Contractor Management Program. Incident metrics are an important element of Occidental's contractor performance scorecards. Near Miss incident analysis is used for Safety Alerts and for training purposes. In addition, Occidental strongly encourages and promotes its "Stop Work Authority" program with both employees and contractors, which empowers all workers with the right and obligation to stop any unsafe work.
04	Offset Wells Assessment	Occidental verifies wellbore integrity by observing the cementing of the casing and through periodic pressure testing in accordance to industry specifications and state regulations. Tests include measurement of fluid volume, temperature surveys, cement bond logs, and casing evaluations. Finally, we develop a Risk Register – a comprehensive risk assessment of all major activities (drilling, well completion, hydraulic fracturing, etc.) for each and every basin project. This process identifies and logs all environmental and site issues, and the mitigations designed to address them.
		Occidental's standard practice for drilling new wells includes a rigorous review of nearby wells to ensure that drilling will not cause damage to or interfere with existing wells. Occidental also follows Area of Review (AOR) requirements under the Underground Injection Control (UIC) Class II Program, which require identification of all active and abandoned wells in the AOR and implementation of procedures that ensure the integrity of those wells when applying for a permit for any new injection well. As a result, Occidental has checked for the presence of old, unknown wells throughout over many years.
		An area review is conducted on all injection applications. This review is a comprehensive wellbore review of all active, inactive, plugged and abandoned wells within a certain radius to ensure there are no pathways for injection fluid to migrate to surface or groundwater. In sum, these practices ensure that wells are sufficiently isolated and do not interfere with the operations and reservoir pressure management.
		Occidental is making significant investments in subsurface characterization in order to assess the rock and fluid properties in our unconventional reservoirs across our acreage. This helps to develop a better understanding of the key geologic parameters that drive productivity, such as porosity, saturation, brittleness, total organic content, mineral and geochemical composition, rock and fluid compatibility, natural fractures, distribution and stress regimes.
		Occidental applies this type of data to construct calibrated petro-physical models that characterize prospective benches and target landing zones within each bench. Occidental conducts appraisals and the delineation of high potential benches to optimize our well designs and development strategy, and to increase our inventory of low-breakeven projects. This includes the collection and analysis of whole cores, cuttings, advanced log suites, micro-seismic surveys and 3-D seismic surveys. Occidental also optimizes drilling, completions and field infrastructure designs for improvements in well productivity and field development costs. Through this effort, high potential benches move to full-field development where Occidental creates maximum value throughout our unconventional acreage.
05	Avoiding Induced Seismic Activity	3-D seismic surveys are used in Occidental's producing and exploration operations to generate detailed three-dimensional images of underground structures, which geoscientists analyze to identify reservoir size, shape and depth, as well as porosity and fluid content. These surveys provide critical information to help find, drill and produce hydrocarbons in the reservoirs and

		to avoid subsurface hazards with the least risk and the least possible impact to the environment.
		In Texas, Occidental conducts a comprehensive review of the U.S. Geological Survey (USGS) database for any seismic events within five to six miles radius of the wellbore. If there are seismic events in this area review, additional assessment of fault risk and other mitigations are conducted. Occidental's areas of operations in New Mexico have not experienced such seismicity associated with produced water disposal. However, Occidental is working with the New Mexico Oil Conservation Division and industry to develop disposal guidelines for deep disposal near basement faults. Occidental's comprehensive well monitoring provisions (e.g., reservoir pressure, well pressure, and pattern monitoring) would lead to further investigation and control measures appropriately.
06 and 07	Pre-and-Post drill Water Monitoring	Occidental receives a letter of groundwater protection determination from the Texas Railroad Commission, Groundwater Advisory Unit as part of the drilling permit for oil and gas wells drilled in Texas. This letter identifies the base of usable-quality groundwater and additional isolation zones that must be protected for a well or multiple wells within a specified area. Typical protective measures include well surface casing set below the depth of the base of usable quality water.
		Groundwater is routinely monitored for quality by each groundwater district. Occidental maintains a list of nearby public and non-public water systems at all of its primary regional offices. Occidental runs a full suite of the U.S. EPA's Safe Drinking Water Act analytical periodically, and a modified suite of analytical parameters every quarter which effectively registers any changes to the groundwater quality.
		Occidental installs a protective barrier on the surface at all drill sites to prevent impact to native soils from the drilling process. Should a spill occur onsite, the spill is remediated, the protective barrier restored, and an evaluation of potential impact to groundwater is performed.
08	Detecting Water Scarcity	The production of oil and gas, electricity and chemicals requires water, and Occidental's business units and facilities understand the importance of managing water withdrawal, consumption and discharge. Occidental's water management program is designed to conserve and protect water sources in communities where we operate. The vast majority of water managed by Occidental is co-produced from hydrocarbon reservoirs with oil and natural gas. Occidental uses produced water from oil and gas reservoirs and other non-potable sources in its operations, wherever feasible, which reduces our demand for freshwater. In addition, we routinely assess our water management practices including those with respect to water supply, treatment, reuse, recycling and discharge, to identify opportunities for improvement.
		To improve transparency and provide relevant information to our stakeholders, Occidental discloses Environmental, Health, Safety and Social performance metrics, including water management practices and water stewardship at its corporate website. See: <u>https://www.oxy.com/SocialResponsibility/overview/Pages/Performance.aspx#water1</u>
		We report annually to the CDP on its water program. In addition, OxyChem, as an American Chemistry Council Responsible Care® company, reports annually its water management practices. Our most recent water-related submission to the CDP is linked to the same corporate website page, listed above. See also in the CDP Water Report: [Table W3.2a:] [Table W3.2c] [Table W2.2]
		As part of Occidental's Health, Environment and Safety Management System (HESMS), our programs, standards and operational strategies designed to conserve water resources, such as improving efficient use, recycling and reuse of water and the quality of water being treated and discharged to surface water bodies. We assess other risk parameters that focus on the unique characteristics of each community and location of operations. Occidental uses industry-tested water risk tools (e.g., IPIECA Global Water Tool, GEMI Local Water Tool for Oil and Gas, WRI

		Aqueduct) to supplement our assessment findings. Assessments are also conducted as-needed to address changes in operations, site conditions or regulations. Before beginning operations in a new location, Occidental's Health, Environment and Safety Management System (HESMS) requires an assessment of potential environmental effects, including those related to water resources. The HESMS encompasses programs, standards and operational strategies designed to conserve natural resources, such as improving efficient use, recycling and reuse of water and the quality of water being treated and discharged to surface water bodies. Occidental considers the longer-term patterns of integrated water resources management, regenerative capacity of ground water and aquifers, population growth/demand shifts and the potential for weather related impacts to evaluate and mitigate the effects of water risks on key operations and the safety and well-being of employees and contractors. When evaluating a new site or asset, this involves evaluating legal and regulatory issues and hydrological yield in terms of the reliability and proximity of other water users during exploration and production activities. Our analysis of water-related risks includes an information-gathering process, environmental due diligence, participation in industry association work groups (for example, IPIECA Water Working Group and the American Chemistry Council Responsible Care®) and external stakeholder engagement to inform and refine our risk management and strategic planning processes.
		 Population growth and industrial growth trends Affected ecosystems Regulatory issues Social context
09	Total Water Use	To improve transparency and provide relevant information to our stakeholders, Occidental discloses Environmental, Health, Safety and Social performance metrics, including water management practices and water stewardship at its corporate website. See: https://www.oxy.com/SocialResponsibility/overview/Pages/Performance.aspx#water1 Chart disclosing water use from Excel file "Occidental Annual Summary ESG KPI website" downloadable under Performance Reports.
		We report annually to the CDP on its water program. Our most recent water-related submission to the CDP is linked to the same corporate website page, listed above. See also in the CDP Water Report: [Table W5.1]
		As reported at the FracFocus website, Occidental's base fluid volume was about 2.2 billion gallons, in 2018. On average, modeling and operational improvements have reduced the overall base fluid volume used per well by 11.7%, using data provided in FracFocus. Also, as reported in FracFocus, in 2018, Occidental is averaging about 10,000 gallons per foot vertical depth. See: <u>www.fracfocus.org</u>
10	Freshwater vs. Non-freshwater	Occidental's water management program is designed to conserve and protect water sources in communities where we operate. The vast majority of water managed by Occidental is co-produced from hydrocarbon reservoirs with oil and natural gas. Occidental strives to use non-freshwater and recycled or reused sources in place of freshwater for oil and natural gas operations. Occidental also obtains water from other non-potable sources. In addition, we routinely assess our water management practices including those with respect to water supply, treatment, reuse, recycling and discharge, to identify opportunities for improvement.

		Occidental discloses Environmental, Health, Safety and Social performance metrics, including water management practices and water stewardship at its corporate website. See: https://www.oxy.com/SocialResponsibility/overview/Pages/Performance.aspx#water1 Chart disclosing water use from Excel file "Occidental Annual Summary ESG KPI website" downloadable under Performance Reports. We report annually to the CDP on its water program. Our most recent water-related submission to the CDP is linked to the same corporate website page, listed above. See also in the CDP Water Report: [Table W5.1a] [Question 1.1] In the Permian Delaware Basin, our industry-leading water recycling program achieves more than 90% recycling rate at new locations; less than 10% of water used for drillings completions are fresh water sources. Since the inception of this program in 2016, 2.7 million barrels of
11	Water Source Types	 produced water sources: since the inception of this program in 2010, 2.7 minion barrels of produced water have been recycled. Occidental discloses Environmental, Health, Safety and Social performance metrics, including water management practices and water stewardship at its corporate website. See: <u>https://www.oxy.com/SocialResponsibility/overview/Pages/Performance.aspx#water1</u> Chart disclosing water use from Excel file "Occidental Annual Summary ESG KPI website" downloadable under Performance Reports.
		 We report annually to the CDP on its water program. Our most recent water-related submission to the CDP is linked to the same corporate website page, listed above. See also in the CDP Water Report: [Table W5.1a], [Table 1.2a] Occidental has achieved significant reduction in consumption of freshwater. Specific measures included as part of Occidental's water management programs constitute recycling produced water through the application of various new and innovative treatment technologies, and use of brackish water. For example, Occidental's consumption of freshwater is less than 10% while the industry average is about 68%. In our Permian operations in New Mexico, we expect more than 80% of water used, in 2019, will be recycled.
12	Flowback Water Reuse	In the Permian Delaware Basin, our industry-leading water recycling program achieves more than 90% recycling rate at new locations. In New Mexico, we expect more than 80% of water used, in 2019, will be recycled.
13	Reducing Fresh Water Consumption	Although operations that use Improved Oil Recovery (IOR) or Enhanced Oil Recovery (EOR) tend to require more water than operations in the primary recovery phase, Occidental strives to use non-freshwater and recycled or reused sources in place of freshwater for both types of operations. Occidental also obtains water from other non-potable sources, seeking to use the lowest-quality water acceptable for operational activities, and it recycles produced water and wastewater wherever feasible.
		It is important to Occidental that we use all sources of freshwater responsibly. Where possible, Occidental does not use freshwater resources in conflict with local users. Occidental's oil production operations generate significant quantities of produced water (i.e., saline water from hydrocarbon reservoirs) which is often sufficient to meet the quantity of our needs. However, there are certain activities, such as hydraulic fracturing and water flooding for which the quality of recycled produced water is not sufficient. For those, Occidental requires freshwater.
		Occidental's oil and gas operations increasingly substitute freshwater resources with brackish/non-potable produced water, naturally occurring water that originates in the hydrocarbon reservoir and comes to the surface along with oil and gas during production. The extraction, processing, treatment and reinjection of produced water is integral to the design and efficient operation of Occidental's mature oil and gas fields, including water flooding and EOR operations.

		Additionally, Occidental leverages an energy-water systems approach to build smarter, cost efficient water infrastructure. Occidental's operations employ advanced production technologies and control systems to enhance the efficiency of resource utilization, including both energy and water. Occidental also works with its service contractors to improve water efficiency.
		Efficiency programs that save water will also save energy and vice versa. Energy and water efficiency can help achieve other objectives, such as emission reductions, water conservation and enhance our social license to operate with stakeholders.
		Occidental's operations employ advanced production technologies and control systems to enhance the efficiency of resource utilization, including both energy and water. Occidental also is developing new or enhancing existing water-related technologies, including the treatment of produced water and wastewater streams. We also continue to evaluate new opportunities for beneficial reuse of water, such as for our chemicals production, non-potable municipal, ecological or agricultural use.
		Occidental's water management is designed to conserve and protect water resources in communities where we operate by optimizing the use of low-quality produced water, the recycling of water and limiting the use of freshwater used for drinking water supplies.
		Occidental has achieved significant reduction in consumption of freshwater. For example, Occidental's consumption of freshwater is less than 10% while the industry average is about 68%. Specific measures included as part of Occidental's water management programs constitute recycling produced water through the application of various new and innovative treatment technologies, and use of brackish water. In 2015, 60% of water needs were sourced using non-potable water in our U.S. upstream operations. In the Permian Basin, our oil and gas operations achieve close to 90%.
		Occidental's Greater Sand Dunes Water Recycling Project has allowed recycling and reuse of 80% of produced water for fracking in our Permian New Mexico operations. Since the project inception in mid-2016, over 8.7 MM bbl. of produced water has been recycled and reused.
14	Wastewater Volume	Occidental discloses Environmental, Health, Safety and Social performance metrics, including water management practices and water stewardship at its corporate website. See: <u>https://www.oxy.com/SocialResponsibility/overview/Pages/Performance.aspx#water1</u> Chart disclosing water use from Excel file "Occidental Annual Summary ESG KPI website" downloadable under Performance Reports.
		Occidental's direct operations in the U.S. are primarily in the Permian Basin (Texas and Southeastern New Mexico). Occidental does not have direct operations in other shale plays (e.g., Eagle Ford, Marcellus, Utica, Barnett). Occidental's Greater Sand Dunes Water Recycling Project has allowed recycling and reuse of 80% of produced water for fracking in our Permian operations. Since the project inception in mid-2016, over 8.7 MM bbl. of produced water has been recycled and reused.
		Occidental's U.S. operations account for zero (0%) wastewater discharge to the environment. Less than 28,000 megalitres per year is disposed of into permitted UIC Class II injection wells, while a vast majority of the produced waste water is recycled and reused.
15	Wastewater Storage	Occidental discloses Environmental, Health, Safety and Social performance metrics, including water management practices and water stewardship at its corporate website. See: <u>https://www.oxy.com/SocialResponsibility/overview/Pages/Performance.aspx#water1</u> Chart disclosing water use from Excel file "Occidental Annual Summary ESG KPI website" downloadable under Performance Reports. See numbers of wastewater generator and reused on the link.

		The vast majority of water managed by Occidental is co-produced from hydrocarbon reservoirs with oil and gas; this is called produced water. Produced water occurs naturally in oil and gas reservoirs. After separating produced water at the surface from the produced oil and gas, Occidental often reinjects it into mature oil and gas reservoirs as part of its EOR operations. Produced water is sometimes reused during drilling, completions and well stimulation – including hydraulic fracturing. When produced water is returned to its original source in deep geologic reservoirs, it is not consumed or removed from the environment. When produced water cannot be used beneficially, it is disposed of by injection into government-approved saltwater reservoirs designated for that purpose.
		Occidental separates produced water, which is typically saline, from the produced oil and natural gas, and recycles it in a closed loop by reinjection into mature reservoirs as part of its IOR or EOR operations.
16	Protecting Environment from Wastewater	Occidental uses double liners with leak detection monitored monthly or single liners with annual inspections on all its recycled water surface impoundments. In sensitive areas, fencing is provided around the perimeter of impoundments to prevent wildlife access. Produced water tank storage facilities have secondary containment berms to contain leaks for sufficient time for Occidental to respond to leaks and initiate repairs. In addition, Occidental has entered into several voluntary conservation agreements to protect
		numerous species and their habitat by minimizing and mitigating potential impacts from development.
17	Drilling Residuals	The vast majority of water managed by Occidental is co-produced from hydrocarbon reservoirs with oil and gas. Occidental separates produced water, which is typically saline, from the produced oil and gas, and recycles it in a closed loop by reinjection into mature oil and gas reservoirs as part of its improved oil recovery (IOR) or enhanced oil recovery (EOR) operations Produced water, along with varying volumes of drilling muds and fracturing fluids can be collected and reused in a closed loop system. Within our U.S. drilling operations, Occidental stores drilling muds, other (oily) residuals and flowback water in closed containment systems or tanks for on-site storage and eventual disposal
18	NORMs	Occidental has identified the specific geologic areas where Naturally Occurring Radioactive Material (NORM) is prevalent and has waste management practices, as well as employee protective guidelines for managing equipment that could become subject to scaling and the presence/build-up of NORM. Management of NORM in these areas include surveying equipment and properly labelling equipment that contains regulated NORM exposure levels. All employees and affected contractors receive annual training on NORM which includes means to prevent or reduce exposure as well as safe waste handling procedures. Occidental has contracts with several NORM permitted facilities to decontaminate NORM equipment so that it can be safely re-used or recycled and Occidental contracts with NORM disposal companies where NORM is safely landfilled or disposed in a permitted disposal well. Occidental has a site review program where Occidental routinely visits all waste disposal facilities to confirm they have programs designed to comply with regulations and provide a safe work environment for their employees.
19	Inactive Wells	Our Permina basin operation in Texas and New Mexico have specific regulations regarding inactive wells. Occidental maintains compliance with inactive well regulations in order to operate, drill and transport production. As part of inactive well compliance, wellbore integrity is demonstrated through mechanical integrity testing and surface reclamation is completed.
20	Waste Products	Occidental continues to evaluate new opportunities and revenue streams for beneficial reuse of water, such as for our chemicals production, non-potable municipal, ecological or agricultural use. Occidental's Chemicals business, OxyChem, participates in the Vinyl Institute's Vinyl Business and Sustainability Council to first identify market opportunities for the use of higher-value vinyl products. Occidental continues to evaluate new opportunities for beneficial reuse of water, such as for

		materials other than produced water for fracturing of wells. Occidental recycles batteries and fluorescent light bulbs under EPA's Universal Waste rule. Occidental has a site review program
		where Occidental routinely visits all waste disposal facilities to confirm they have programs designed to comply with regulations and provide a safe work environment for their employees.
		Occidental is evaluating the potential of produced water desalination to provide a beneficial reuse of water for agricultural, ecological use or ranching operations. Whereas a complete
		desalination is not practical in total for such water recovery due to the enormity of salt
		content, a partial desalination, if economically viable, would render a source of water for
		agricultural use at a minimum. This is an active program with multiple paths to drive the commercial assessment. Occidental does not use wastewater for dust suppression.
21	Toxicity Reduction	Occidental's oil and gas waste is, under the U.S. EPA's Resource Conservation and Recovery Act (RCRA) defined as "non-hazardous". Also, most of Occidental's oil and gas operations are qualified Conditionally Exempt Small Quantity Generators (CESQG) of hazardous waste and are not subject to U.S. EPA Tier III reporting.
		Recent advances in applying "greener" approach for the treatment of produced water have enabled Occidental to reduce its reliance upon halogen based chemistry. Although halogens
		are well-known and highly effective oxidizer of unwanted constituents in water, the newest Occidental's process has accelerated the application of green "chemical free" treatment of produced water.
22	Dry Chemicals	Occidental has developed a procedure which is chemical-specific and it includes evaluation and
		attempts to use dry friction reducer when possible. If the use of dry friction reducer is not available, we use liquid friction reducer. Closed loop systems are used in the use of either dry or liquid chemicals.
23	Eliminating BTEX	It is Occidental's practice to avoid diesel fuels, including any of the following chemicals:
		benzene, toluene, xylene and ethylbenzene (collectively BTEX), in hydraulic fracturing treatments. In certain hydraulic fracturing fluid ingredients, BTEX components may be present
		in trace amounts. In such cases, the BTEX components will be disclosed in accordance with FracFocus procedures.
24	CBI Exclusion Disclaimer	Percent of hydraulically fractured wells where there is publically available frac-fluid chemicals used: 100
		Occidental is committed to public disclosure about its hydraulic fracturing operations. In 2011, Occidental was an early participant in FracFocus [®] , a website created by the Ground Water Protection Council and the Interstate Oil and Gas Compact Commission to provide for well- specific voluntary disclosure of hydraulic fracturing operations, including the chemical
		ingredients used in fracturing fluids. In addition to providing a national registry, the website
		provides factual information about hydraulic fracturing and groundwater protection. As a
		leading producer of oil and gas in the United States, Occidental remains at the forefront in disclosing hydraulic fracturing, including in jurisdictions where such disclosure is voluntary. FracFocus may exclude chemicals protected by claims of protected / confidential information.
25	Reducing CBI	See also: <u>www.fracfocus.org</u> Occidental reports through FracFocus chemicals used on well-by-well basis. The percentage of
23	Claims	hydraulically fractured wells where there is publically available frac-fluid chemicals used is 100 percent. Occidental works closely with our vendors and well-servicing contractors to: a) ensure
		data from well completions is submitted to FracFocus website, and b) use of unknown or vendor proclaimed property chemicals is limited to less than three percent of the total frac fluid volume.
		Occidental is committed to public disclosure about its hydraulic fracturing operations. Occidental was an early participant in FracFocus [®] , a website created by the Ground Water
		Protection Council and the Interstate Oil and Gas Compact Commission to provide for well- specific voluntary disclosure of hydraulic fracturing operations, including the chemical
		ingredients used in fracturing fluids. In addition to providing a national registry, the website provides factual information about hydraulic fracturing and groundwater protection. As a

leading producer of oil and gas in the United States, Occidental remains at the forefront in
disclosing hydraulic fracturing information, including in jurisdictions where such disclosure is
voluntary. See also: <u>www.fracfocus.org</u>