(54) Titre : CONTENANTS TELESCOPIQUES POUR DES OPERATIONS DE PRODUCTION D'HYDROCARBURES
(54) Title: TELESCOPIC CONTAINERS FOR HYDROCARBON PRODUCTION OPERATIONS

(57) Abrégé/Abstract:
Telescopic containers (10, 100) for containing fluids associated with hydrocarbon production are disclosed. Such containers (10, 100) may comprise a lower container section (12), an upper container section (14) moveable between a retracted position and an extended position in a telescopic manner relative to the lower container section (12) and a sealing member (40, 50). The sealing member (40, 50) prevents or substantially prevents leakage of fluid from the container (10, 100) between the upper container section (14) and the lower container section (12). The lower container section (12) may define an elongated and/or multi-sided shape.
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Fig. 6

(57) Abstract: Telescopic containers (10, 100) for containing fluids associated with hydrocarbon production are disclosed. Such containers (10, 100) may comprise a lower container section (12), an upper container section (14) moveable between a retracted position and an extended position in a telescopic manner relative to the lower container section (12) and a sealing member (40, 50). The sealing member (40, 50) prevents or substantially prevents leakage of fluid from the container (10, 100) between the upper container section (14) and the lower container section (12). The lower container section (12) may define an elongated and/or multi-sided shape.
TELESCOPIC CONTAINERS FOR HYDROCARBON PRODUCTION OPERATIONS

CROSS REFERENCE TO RELATED APPLICATIONS AND CLAIMS OF PRIORITY

[0001] The present application claims priority to U.S. provisional patent application no. 61/591,644 filed on January 27, 2012, the entire contents of which are hereby incorporated by reference.

[0002] The present application claims priority to Canadian patent application no. 2,776,171 filed on May 17, 2012, the entire contents of which are hereby incorporated by reference.

TECHNICAL FIELD

[0003] The disclosure relates generally to operations associated with hydrocarbon production from subsurface wells, and more particularly to storage of fluids associated with such operations.

BACKGROUND OF THE ART

[0004] The following discussion is not an admission that anything described below is common knowledge or citable as prior art.

[0005] Hydraulic fracturing, also called fracking or hydrofracking, can be used to stimulated wells used to extract hydrocarbons such as oil and/or natural gas from underground formations. Hydraulic fracturing involves pumping large volumes of fluid, typically mixed with a proppant, at relatively high pressures down a well bore and into an underground formation. The fluid causes propagation of fractures in the formation, and the proppant helps keep the fractures open after the pressure is removed. This can be used to cause the release of oil and/or gas from the underground formation.

[0006] A hydraulic fracturing site typically requires storage containers (tanks), also called “frac tanks”, sufficient to store large volumes of well-related fluids such as water, brine and flowback fluids for example. The volume of fluids required may range from roughly 50,000 gallons to one or two million gallons depending on the type of operation conducted. Following the fracturing operations, such containers may be used to store frac water, flowback or brine until they can be treated for discharge or re-used.

[0007] The storage containers must be transported to the site, set up, and later removed after the operation. Some conventional rectangular, steel-walled
containers have a capacity of 21,000 gallons (500 barrels). Specific examples of containers are shown in U.S. Patent Application Publication No. 2011/0186581 and U.S. Patent No. 7,997,623 B2. Depending on the type of operation conducted, a relatively large number of such containers may be required and may occupy a relatively large footprint at the well site. Also, the cost of the containers and the costs of transporting, installing and removing the containers from the site can be significant.

[0008] Improvement is therefore desirable.

SUMMARY

[0009] The disclosure describes systems, devices, assemblies and processes useful in operations associated with hydrocarbon production. For example, systems, devices, assemblies and processes described herein may be useful in the handling and storing of fluids associated with hydrocarbon production such as fluids involved in well oil and gas operations including drilling and well-stimulation operations such as hydraulic fracturing.

[0010] In one aspect, the disclosure describes a telescopic container for fluid associated with hydrocarbon production. The container may comprise:

- a lower container section comprising a floor having an elongated shape, the lower container section defining a lower container space;
- an upper container section moveable between a retracted position and an extended position in a telescopic manner relative to the lower container section; and
- a sealing member;

wherein while the upper container section is disposed in the extended position, the lower container section, the upper container section and the sealing member cooperate to define an expanded container space larger than the lower container space; and

wherein the sealing member is configured to prevent or substantially prevent leakage of fluid from the expanded container space between the upper container section and the lower container section.

[0011] In another aspect, the disclosure describes a telescopic container for fluid associated with hydrocarbon production. The container may comprise:

- a lower container section defining a lower container space having a plurality of lower side walls;
an upper container section, the upper container section being movable between a retracted position and an extended position in a telescopic manner relative to the lower container section; and a sealing member;

wherein the lower container section, the upper container section and the sealing member cooperate to define an expanded container space greater than the lower container space when the upper container section is in the extended position; and wherein the sealing member is configured to prevent or substantially prevent leakage of fluid from the expanded container space when the upper container section is at the extended position and a level of fluid inside the expanded container space exceeds an uppermost height of the lower side walls.

[0012] In another aspect, the disclosure describes a telescopic container for fluid associated with hydrocarbon production. The container may comprise:

a lower container section defining a lower container space;

an upper container section moveable between a retracted position and an extended position in a telescopic manner relative to the lower container section; and a pneumatic sealing member;

wherein while the upper container section is disposed in the extended position, the lower container section, the upper container section and the pneumatic sealing member cooperate to define an expanded container space larger than the lower container space; and wherein the pneumatic sealing member is configured to prevent or substantially prevent leakage of fluid from the expanded container space between the upper container section and the lower container section.

[0013] In a further aspect, the disclosure describes an assembly for containing fluid associated with hydrocarbon production. The assembly may comprise:

a container for containing fluid, the container comprising a lower container section defining a lower container space, an upper container section moveable between a retracted position and an extended position in a telescopic manner relative to the lower container section, the lower container section and the upper container section together defining an expanded container space larger than the lower container space when the upper container is in the extended position; and a skid supporting the container, the skid comprising at least two support beams spaced apart across a width of the skid and at least two cross support pieces extending between and being secured to the support beams.
Further details of these and other aspects of the subject matter of this application will be apparent from the detailed description and drawings included below.

DESCRIPTION OF THE DRAWINGS

Reference is now made to the accompanying drawings, in which:

[0015] FIG. 1 is an axonometric view of an exemplary telescopic container of the present disclosure in a retracted configuration;

[0016] FIG. 2 is an axonometric view of the telescopic container of FIG. 1 in an extended configuration;

[0017] FIGS. 3A, 3B and 3C are side elevation, top plan and end elevation views respectively of an exemplary embodiment of the telescopic container of FIG. 1 in the extended configuration;

[0018] FIG. 4 is a detailed schematic section view of an exemplary interface between a lower container section and an upper container section of the container of FIGS. 3A-3C disposed inside of circle 4 in FIG. 3C;

[0019] FIG. 5 is a schematic elevation view of an exemplary actuator for moving the upper container section of the container of FIGS. 3A-3C from a retracted position toward an extended position;

[0020] FIG. 6 is a schematic cross-section view taken along line 6-6 in FIG. 3A showing sealing members including a sealing membrane lining inside surfaces of the container of FIGS. 3A-3C;

[0021] FIGS. 7A, 7B and 7C are side elevation, top plan and end elevation views respectively of another exemplary embodiment of the telescopic container of FIG. 1 in the retracted configuration;

[0022] FIG. 8 is a cross-sectional view of the container of FIGS. 7A, 7B and 7C taken along line 8-8 of FIG. 7B;

[0023] FIG. 9 is a cross-sectional view of the container of FIGS. 7A, 7B and 7C taken along line 9-9 of FIG. 7A;

[0024] FIGS. 10A, 10B and 10C are side elevation, top plan and end elevation views respectively of the container of FIGS. 7A, 7B and 7C in the extended configuration;
FIG. 11 is a cross-sectional view of the container of FIGS. 7A, 7B and 7C taken along line 11-11 of FIG. 10B;

FIG. 12 is a cross-sectional view of the container of FIGS. 7A, 7B and 7C taken along line 12-12 of FIG. 10A;

FIGS. 13A and 13B are axonometric views of an exemplary skid for the container of FIG. 1;

FIGS. 14A and 14B are side elevation and top plan views respectively of the skid of FIGS. 13A and 13B;

FIG. 15 is a cross sectional view of the skid of FIGS. 13A and 13B taken along line 15-15 of FIG. 14B;

FIG. 16 is an axonometric view of an exemplary floor for the container of FIG. 1;

FIGS. 17A and 17B are side elevation and top plan views respectively of the floor of FIG. 16; and

FIG. 18 is a cross sectional view of the floor of FIG. 16 taken along line 18-18 of FIG. 17A.

DETAILED DESCRIPTION

Aspects of various embodiments are described through reference to the drawings.

FIGS. 1 and 2 show an exemplary embodiment of a telescopic container, generally shown at 10, 100, according to the present disclosure. Container 10, 100 may be used to store fluids associated with the production of hydrocarbon wells such as hydraulic fracturing and/or drilling operations. For example, container 10, 100 may be used to store well-related fluids (e.g., liquids) such as water or other fracturing fluids, and/or flow back fluids that are involved in hydraulic fracturing procedures. For example, container 10, 100 may be used to store water that is subsequently mixed with proppant and other additives to be used as a fracturing fluid. Container 10, 100 may also be used to store flow back fluid(s) that may exit the well following a hydraulic fracturing operation. Container 10, 100 may be transported to a well site using a truck such as a flatbed truck (not shown) or other suitable towing or transport vehicle. The well site may comprise a drilling pad area (not shown) that is
configured to accommodate one or more of containers 10, 100 and other equipment (not shown) required to conduct a well stimulation operation such as hydraulic fracturing.

[0035] Due at least partially to the shape and/or size of container 10, 100, container 10, 100 may provide more fluid storage capacity per unit land area than many conventional containers. For example, conventional rectangular steel-walled containers may have a capacity of 21,000 gallons (500 barrels). These containers may be roughly 45 feet (13.7 meters) long, 8 or 9 feet (2.4 or 2.7 meters) high, and 10 or 11 feet (3 or 3.4 meters) wide. These containers can have a rear axle which allows them to be moved by a fifth wheel tractor truck. At the site, these containers are placed on a mat foundation typically made of squared timbers bolted together.

[0036] Another known type of container is an inflatable bladder, or pillow tank. These containers may be a few feet high, with various lengths and widths. The bladder is transported in a deflated state on a truck. At the site, a thick membrane is placed on the ground to cover sharp areas in the earth and the container is unfolded over the ground cover membrane.

[0037] Another known type of container is a round surface container. These containers are made by fastening many steel panels together to form a ring on the ground over a ground covering membrane. The seams between the panels are typically not watertight to each other or the ground and therefore a second membrane is installed in the ring to contain the water. The containers may be up to 11 feet (3.4 meters) high and over 100 feet (30 meters) in diameter, with capacities ranging from about 10,000 to 40,000 barrels.

[0038] Another known type of container is a cylindrical, 400 barrel, container of about 12 feet (3.7 meters) in diameter. This type of container has skid rails on its bottom and along one side. The skid rails allow the container to be transported on a winch truck. The container is transported to the site on its side, balanced on the rear roller for placement at the site, and then tipped to stand vertically on a mat foundation. The need to tip the container up during unloading, and to pull the container back down on reloading, requires a skilled driver and limits the height of these containers to about 20 feet (6.1 meters).

[0039] The choice between different types of fluid containment may be influenced by trucking costs, set up time, site constraints, safety and regulatory requirements. In many remote areas, such as northern Alberta, there may not be
proper roads to the site and the work may have to be done in the winter when the ground is frozen. The cost of transporting a 400 barrel cylindrical container from Calgary to Fort McMurray was about $5,000 in 2012. Shipping costs for conventional rectangular containers are similar. Since up to 100 of these containers may be required for a large fracturing operation, the trucking costs can be significant. Further, cylindrical and rectangular containers must often be placed on the drilling pad essentially one at a time to give room for the truck movements required to unload a container. This increases the set up time required, particularly for the cylindrical containers which require a multi-step unloading and tip-up procedure. The cylindrical 400 barrel containers are higher than standard rectangular containers, but they do not double the liquid storage per unit area of ground covered because cylindrical containers inherently do not cover the ground as efficiently as rectangular containers, and some clearance room is required between containers for tipping the cylindrical containers in place.

[0040] Pillow tanks can be moved by smaller trucks but they must be unfolded on site, they typically occupy a large land area per unit volume, and the membrane is directly exposed to the environment and UV degradation. Fear of leaks makes these containers unpopular, particularly for use in holding brine or hydrocarbon based fluids since these can cause more environmental damage than un-used frac water if there is a spill.

[0041] Round surface containers can hold large volumes of water but can require many hours of high priced on-site labor to fasten the panels together and, for very large containers, to weld membrane pieces together. The large size of these containers helps to efficiently cover the ground by avoiding spaces between multiple containers, but this is offset by the circular shape which creates unusable spaces in the corners of the site. The size of the container also inherently increases the risk that a container failure, caused for example by a truck hitting the container wall, could cause environmental harm. Another disadvantage is that these containers have no drain ports. The containers must be filled and emptied by siphon tubes over the side of the container. This can cause pumping problems or prevent a complete drain of the container. Regulators also discourage and restrict operators approvals to flow back to this type of containment system.

[0042] Returning to FIGS. 1 and 2, container 10, 100 of the present disclosure may comprise one or more lower container sections 12 and one or more
corresponding upper container sections 14. Lower container section(s) 12 may comprise a plurality of lower side walls 12A-12D defining a multi-sided (e.g., four-sided) lower container space 15A (shown in FIG. 6). Upper container section(s) 14 may comprise a plurality of upper side walls 14A-14D. Upper container section(s) 14 may also be multi-sided (e.g., four-sided) in correspondence with lower container section(s) 12.

[0043] Upper container section(s) 14 may be movable between a retracted (e.g., lowered) position (see FIG. 1) and an extended (e.g., raised) position (see FIG. 2) in a telescopic manner relative to lower container section(s) 12. When upper container section(s) 14 is/are moved from the retracted position toward the extended position relative to lower container section(s) 12, the overall height of container 10, 100 may be increased. For example, lower side walls 12A-12D may be disposed inwardly of upper side walls 14A-14D so that lower container section(s) 12 may be nested inside upper container section(s) 14 when container 10, 100 is in the retracted configuration. Alternatively, upper side walls 14A-14D may be disposed inwardly of lower side walls 12A-12D so that upper container section(s) 14 may be nested inside lower container section(s) 12 when container 10, 100 is in the retracted configuration. Lower container section(s) 12 and upper container section(s) 14 may cooperate to define expanded container space 15 (shown in FIG. 6) for well-related fluids (e.g., liquids) when upper container section(s) 12 is in the extended position.

[0044] Skid(s) 16 may be provided to support container 10, 100. Together, one or more of containers 10, 100 and skid(s) 16 may form an assembly for containing fluid. Lower container section(s) 12 may or may not be secured to skid(s) 16 according to conventional or other methods such as welding and/or with the use of suitable fasteners as required. A more detailed description of skid(s) 16 is provided further below. Container 10, 100 may also comprise one or more sealing members (shown in FIGS. 4 and 6) for retaining the fluid inside expanded container space 15 when upper container section(s) 12 is in the extended position. A more detailed explanation of the sealing member(s) is also provided further below.

[0045] One or more actuators 18 may be provided to cause movement (e.g., raising and/or lowering) of upper container section(s) 14 relative to lower container section(s) 12 in a telescopic manner. For example, actuator(s) 18 may comprise one or more hydraulic, pneumatic, electrical or other suitable type of actuators. The number of actuator(s) 18 required may depend on the shape and size of container 10,
100 and the capacity and type of actuator(s) 18. For example, for a four-sided (e.g., rectangular, square) container 10, 100, it may be appropriate to have one actuator disposed at each corner of container 10, 100. Actuator(s) 18 may be distributed and controlled as required to provide substantially distributed support and even movement of upper container section(s) 14 relative to lower container section(s) 12.

[0046] Container 10, 100 may also comprise one or more ports 20 that may serve as inlets and/or outlets for fluids. Port(s) 20 may be in fluid communication with the expanded container space(s) 15 of container 10, 100 via lower container section(s) 12 as shown or, alternatively or in addition, via upper container section(s) 14. Port(s) 20 may be used to connect to distribution piping (e.g., header pipes, flowback manifold) (not shown) for permitting fluids to exit or enter container 10, 100. Port(s) 20 may include one or more pipes with a diameter of 8 inches (20 cm) or more to permit container 10, 100 to be filled and emptied relatively quickly.

[0047] Port(s) 20 may include flange(s) 21 configured to be bolted to a header pipe (not shown) and establish fluid communication between expanded container space(s) 15 of container 10, 100 and the header pipe. Such header pipe may have a diameter of up to 12 inches (30 cm) or more. Port(s) 20 may be located at one or more ends of container 10, 100 (e.g., on lower side walls 12B and/or 12D) so that port(s) 20 may be exposed and easily accessible when several containers 10, 100 are arranged side by side in a row.

[0048] Container 10, 100 may also comprise one or more hatches 22 in roof(s) 24 of container 10, 100 to provide access to the inside of container 10, 100 for maintenance, servicing and/or cleaning purposes. Alternatively, upper container section(s) 14 may have a substantially open top such that roof(s) 24 may be partial, or, upper container section(s) 14 may not have a roof at all. Roof(s) 24 may provide structural rigidity to upper container section(s) 14 and may also shield the contents of the container 10, 100 from UV radiation. Roof(s) 24 may also serve to reduce chemical transfers between the inside of the container 10, 100 and the environment.

[0049] FIGS. 3A, 3B and 3C are side elevation, top plan and end elevation views respectively of an exemplary embodiment of telescopic container 10 in the extended configuration. Actuator(s) 18 and skid(s) 16 are not shown in FIGS. 3A, 3B and 3C. Container 10 may have base(s) 25 to which one or more lugs 26 may be secured, and can serve as points of attachment for moving or securing container 10. For example, lug(s) 26 may be used as points of attachment for winching container 10.
onto a flatbed truck (not shown) and securing container 10 to the truck. Container 10 may be transported in a retracted configuration with upper container section(s) 14 lowered and lower container section(s) 12 being covered by upper container section(s) 14. Container 10 may be placed on skid(s) 16 during use at a well site, or, alternatively the base(s) 25 may be sufficiently reinforced so that skid(s) 16 may not be required.

[0050] Container 10 may comprise one or more vents 28. Vent(s) 28 may be provided in roof(s) 24 of upper container section(s) 14 and may facilitate the filling and emptying of container 10. Container 10 may also comprise one or more drains 30. Drain(s) 30 may be provided in floor(s) 32 (shown in FIG. 6) of container 10.

[0051] The overall length of the container up to 50 feet (15.2 meters) or more. As shown in FIG. 3A, the overall length of container 10 may be about 57 feet (17.4 meters) or more. The overall height of container 10 in the retracted configuration may be about 11 feet (3.4 meters). The overall height of container 10 in the extended configuration may be about 15-20 feet (4.6-6 meters) or more, such as about 22 feet (6.7 meters) for example. The overall width of container 10 as shown in FIG. 3B may be about 12 feet, 4 inches (3.8 meters). Accordingly, container 10 may have a capacity of about 370 KL. For example, container 10, 100 may be made to the maximum size allowed for transportation through rural Canada and the U.S.. Container 10 may be constructed primarily of carbon steel and may be galvanized or epoxy coated to inhibit rusting.

[0052] FIG. 4 is a detailed schematic section view of an exemplary interface between lower container section(s) 12 and upper container section(s) 14 of container 10. The interface may be disposed within circle 4 of FIG. 3C. Upper container section flange(s) 34 may be disposed at or near a bottom end of upper container section(s) 14 of container 10. For example, upper container section flange(s) 34 may extend laterally from one or more of upper side walls 14A-14D inwardly toward lower container section(s) 12. Similarly, lower container section flange(s) 36 may be disposed at or near a top end of lower container section(s) 12 of container 10. For example, lower container section flange(s) 36 may extend laterally from one or more lower side walls 12A-12D outwardly toward upper container section(s) 14. Upper container section flange(s) 34 may be disposed below lower container section flange(s) 36 so that the flange(s) 34, 36 overlap each other and are disposed in interference relationship preventing upper container section(s) 14 from being moved.
upward beyond a certain height (e.g., beyond the extended position) relative to lower container sections(s) 12.

[0053] As shown in FIG. 4, when upper container section(s) 14 approach(es) a fully extended position, upper side wall(s) 14C, lower container section flange(s) 36, lower side wall(s) 12C and upper container section flange(s) 34 define chamber(s) 38 extending peripherally about container 10. Chamber(s) 38 may substantially enclose one or more sealing members that serve to retain contents (e.g., well-related fluid) inside the expanded container space 15 provided by container 10 when upper container section(s) 14 is/are in the extended position. For example, sealing member(s) may comprise one or more seal(s) 40 that may extend longitudinally along chamber(s) 38. For example, chamber(s) 38 and seal(s) 40 may extend about the entire perimeter of container 10 (e.g., peripherally about lower container space(s) 15A). Seal(s) 40 may be compressible and accordingly may be compressed between lower container section flange(s) 36 and upper container section flange(s) 34 when upper container section(s) 14 is/are in the extended position. Seal(s) 40 may be selected to provide a satisfactory barrier to substantially prevent (e.g., hinder) fluids (e.g., water) from leaking out of container 10 via the interface(s) between lower container section(s) 12 and upper container section(s) 14.

[0054] Seal(s) 40 may be pneumatic (e.g., inflatable) and accordingly may be filled with compressed air, or other compressible fluid, to be expanded and establish a seal between the flanges 34 and 36, between the lower side wall(s) 12C and upper side wall(s) 14C, or both. Once filled to a desired level of inflation, an air inflation valve (not shown) may be closed in order to maintain the desired level of inflation. Suitable pneumatic seal(s) 40 may be of the type sold, for example, by Mechanical Research & Design Inc. under the SEALFAST trade name. Such seals may be made from durable elastomer extrusions and may provide a pressure tight closure to 500 psig (3.45 MPa). Seal(s) 40 may substantially prevent fluids (e.g., water) from leaking out of container 10 between upper container section(s) 14 and lower container section(s) 12.

[0055] Container 10 may also comprise one or more guide members to facilitate the movement of upper container section(s) 14 relative to lower container section(s) 12. Guide member(s) may reduce friction at one or more contact points between upper container section(s) 14 and lower container section(s) 12. For example, guide member(s) may include one or more rollers 42 mounted to flanges 34 and 36. Roller(s) 42 may be rotatably mounted to lower container section flange(s) 36
for rolling contact against upper side wall(s) 14C. Alternatively or in addition, roller(s) 42 may be rotatably mounted to upper container section flange(s) 34 for rolling contact against lower side wall(s) 12C. For example, roller(s) 42 may comprise a high molecular weight plastic. For example, roller(s) 42 may comprise a relatively low-friction material such as Teflon™.

[0056] FIG. 5 is a schematic elevation view of an exemplary actuator 18 for moving upper container section(s) 14 of container 10 from a retracted position toward an extended position. As mentioned above, actuator(s) 18 may comprise one or more hydraulic actuators 18. In the illustrated embodiment of container 10 where the overall shape of container 10 is rectangular, it may be appropriate to have one of actuator(s) 18 disposed at each corner of container 10. In addition, it may be appropriate to have one or more additional actuators 18 disposed along upper side walls 14A-14D as necessary depending on the shape and size of container 10.

[0057] Lower end(s) 18A of actuator(s) 18 may be secured to base(s) 25 extending laterally outwardly from underneath lower container section(s) 12. Upper end(s) 18B of actuator(s) 18 may be secured to upper container section(s) 14 via bracket(s) 44. Bracket(s) 44 may serve to secure upper end(s) 18B of actuator(s) 18 to one or more of upper side walls 14A-14D. Accordingly, actuator(s) 18 may exert a force between base(s) 25 and upper container section(s) 14 in order to move the upper container section(s) 14 toward the extended position.

[0058] Actuator(s) 18 may be permanently secured (e.g., welded) to container 10. Alternatively, quick connect/disconnect fittings may be provided to permit actuator(s) 18 to be portable and be moved from one container 10 to another container 10 as required. In such case, a locking mechanism may be required to support upper container section(s) 14 in the extended position when actuator(s) 18 are removed. For example, pins may be inserted into sockets provided in lower container section(s) 12 and at the bottom of upper container section(s) 14. Alternatively, support posts may be inserted between skid(s) 16 or base(s) 25 and upper container section(s) 14.

[0059] Actuator(s) 18 may be driven by a source of pressurized fluid such as a hydraulic pump (not shown) that may be available on such well sites for other purposes. In cases where a plurality of actuators 18 may be used, they may be linked to a controller (not shown) further linked to one or more position sensors associated with each actuator 18. The controller may monitor the position of each actuator 18.
and control the flow of hydraulic fluid to/from actuator(s) 18 as required to have them rise or lower at equal rates so that upper container section(s) 14 may be raised or lowered uniformly. This may reduce the possibility of binding upper container section(s) 14 against lower container section(s) 12. When upper container section(s) 14 has/have been fully raised or raised to a desired height, one or more lock pins 46 may be inserted through part of actuator(s) 18 to positively lock actuator(s) 18 in an extended position if/when hydraulic pressure is removed.

[0060] FIG. 6 is a partial schematic cross-section view taken along line 6-6 in FIG. 3A. As shown, lower container section(s) 12 of container 10 may define lower container space(s) 15A. When upper container section(s) 14 is moved from the retracted position toward the extended position in a telescopic manner relative to lower container section(s) 12, the overall height of container 10 may be increased. When upper container section(s) 14 is in the extended position, upper container section(s) 14 may define upper container space(s) 15B. Also, when upper container section(s) 14 is in the extended position, lower container section(s) 12, upper container section(s) 14, and sealing member(s) 40, 50 together may define expanded container space(s) 15 that includes lower container space(s) 15A and upper container space(s) 15B. Accordingly, the sealing member(s) (e.g., seal(s) 40 and/or sealing membrane(s) 50 described further below) may be configured to substantially prevent (e.g., hinder) leakage from expanded container space(s) 15 when upper container section(s) 14 is at the extended position and a volume of fluid(s) in expanded container space(s) 15 exceeds lower container space(s) 15A such as when an uppermost level of fluid within the expanded container space is disposed above an uppermost height of lower container space(s) 15A (e.g., an uppermost height of lower side walls 12A-12D).

[0061] Expanded container space(s) 15 may have a capacity of 1500-2000 barrels or more. Depending on the type of well-stimulation conducted, such capacity may be sufficient to handle some well stimulation operations with a single container, and to handle high-volume operations with relatively fewer containers.

[0062] For example, sealing member(s) may also, or alternatively, include sealing membrane(s) 50 (e.g., bladder) lining inside surfaces of container 10. For illustration purposes only, sealing membrane(s) 50 is shown in FIG. 6 to be spaced apart from inside wall of container 10. However, one skilled in the relevant arts will understand that when fluids (e.g., liquid, water) is/are inside sealing membrane(s) 50, side walls 12A-12D and 14A-14D would provide support for sealing membrane(s) 50,
and consequently, the hydrostatic pressure of the fluid(s) would cause sealing membrane(s) 50 to be in contact with side walls 12A-12D and 14A-14D. Sealing membrane(s) 50 may be in fluid communication with port(s) 20 to permit filling and emptying of container 10 via port(s) 20.

[0063] Sealing member(s) may include sealing membrane(s) 50 and/or seal(s) 40 and/or any other suitable type of sealing member(s) that may substantially prevent leakage of fluid from storage volume 15 between lower container section(s) 12 and upper container section(s) 14. Sealing membrane(s) 50 may also substantially prevent direct contact between fluids contained in container 10 and side walls 12A-12D, 14A-14D and floor(s) 32 of container 10. Accordingly, sealing membrane(s) 50 may serve to prevent corrosion of container 10 that could otherwise occur due to the presence of chemicals that may be in the fluid(s) stored in container 10. Sealing membrane(s) 50 may also form a second containment barrier preventing fluids (e.g., liquid, water) from leaking from container 10. Either of the sealing membrane(s) 50 or seal(s) 40 may be used to hold fluid(s) within container 10, but it may be desired in some applications to use both to provide a double wall containment system. For example, seal(s) 40 and/or sealing membrane(s) 50 may be configured to provide a substantially liquid-tight containment of fluids inside expanded container space(s) 15.

[0064] Lower container section(s) 12, upper container section(s) 14 and other portions of container 10 may comprise structural reinforcing features, such as corrugation or bracing. Such features may be disposed on the outside of container 10 so that the inside surfaces of container 10 may therefore be relatively smooth to avoid producing stress concentrations on sealing membrane(s) 50. Sealing membrane(s) 50 may be supported in container 10 primarily by supporting frame(s) 52 bolted to roof(s) 24 of container 10 through holes with grommets in sealing membrane(s) 50. In addition, one or more straps 54 between the outside of sealing membrane(s) 50 and the inside of container 10 may be used to support sealing membrane(s) 50 and/or to reduce wrinkles in sealing membrane(s) 50 as container 10 is emptied or filled.

[0065] Frame 52 may be dimensioned so that it may fit inside lower container section(s) 12 (i.e., between lower side walls 12A and 12C) when upper container section(s) 14 is/are in the retracted position. In this way, when there is no fluid in upper container section(s) 14, sealing membrane(s) 50 may drape into lower container section(s) 12 rather than rest on lower container section flange(s) 36. This may prevent sealing membrane(s) 50 from being pinched between lower container section
flange(s) 36 and the inside of upper side walls 14A and 14C when upper container section(s) 14 is/are in the retracted position (e.g., lowered). Frame 52 may also surround any openings formed in a top portion of sealing membrane(s) 50 corresponding with hatches 22.

5 [0066] Sealing membrane(s) 50 may be made of a flexible geomembrane material that is resistant to chemicals expected to be in the fluids stored in container 10. Sealing membrane(s) 50 may not need to be UV resistant if container 10 has roof 24. Depending on the specific application, suitable materials for sealing membrane(s) 50 may include low density polyethylene (LPDE), high density polyethylene (HPDE) and polyvinyl chloride (PVC). Another suitable material may be linear low density polyethylene (LLDPE) as used in Enviro Liner 4000™ liners sold by Layfield Environmental Systems Corp. Sealing membrane(s) 50 may be about 0.5 to 1.0 mm thick.

[0067] Leak sensor(s) 56 may be provided near the bottom of container 10 such as near the bottom of lower container section(s) 12. Leak sensor(s) 56 may be configured to detect the presence of fluid(s) between sealing membrane(s) 50 and the inside of container 10. For example, leak sensor(s) 52 may be disposed outside of sealing membrane(s) 50 but inside of lower container section(s) 12 of container 10. For example, leak sensor(s) 52 may be configured to provide an alert in the event where presence of such fluid(s) is detected and such detection may be representative of a leak. Accordingly, the detection of a leak in sealing membrane(s) 50 may provide warning to maintenance personnel that repair or replacement of sealing membrane(s) 50 may be required.

[0068] Alternatively or in addition, leak sensor(s) 56 may comprise one or more pressure gauges coupled to inflatable seal(s) 40 to detect an inadequate or loss of pressure in seal(s) 40 and provide an appropriate alert. In this instance, leak sensor(s) 56 may also be part of a feedback control loop (not shown) and its/their signal(s) may be used as a basis for activating an air pump connected to seal(s) 40 for the purpose of inflating seal(s) 40 through a one-way valve as required.

[0069] One skilled in the relevant arts will appreciate that container 10, 100 could comprise more than two container sections moveable in a telescopic manner relative to each other to form expanded container space 15. For example, one or more additional container sections (not shown) in addition to lower container section(s) 12 and upper container section(s) 14 moveable in a telescopic manner could further
increase the overall height and storage capacity of container 10, 100. Accordingly, it is understood that teachings provided herein could also be applicable to such arrangements of container 10, 100. For example, it is understood that sealing members 40, 50 described herein could also be used in conjunction with such additional container sections.

**[0070]** FIGS. 7A, 7B and 7C are side elevation, top plan and end elevation views respectively of another exemplary embodiment of a telescopic container 100 in the retracted configuration and showing actuator(s) 18. Container 100 may include components of container 10 described above and may have similarities with container 10. Accordingly, like reference numerals are used below to represent like elements.

**[0071]** As shown in FIGS. 7A, 7B and 7C, tank 100 may be disposed on skid(s) 16 during use on a well site and/or during transport. The construction of skid(s) 16 and floor(s) 320 of container 100 will be described in more details below. One skilled in the relevant arts will appreciate that teachings provided below in relation to container 100 may also be applicable to container 10 and vice versa.

**[0072]** FIG. 8 is a cross-sectional view of the container of FIGS. 7A, 7B and 7C taken along line 8-8 of FIG. 7B.

**[0073]** FIG. 9 is a cross-sectional view of the container of FIGS. 7A, 7B and 7C taken along line 9-9 of FIG. 7A. Floor(s) 320 may be sloped toward a middle region of lower container section(s) 12 to facilitate cleaning of container 100. In addition, floor(s) 320 may also comprise one or more drainage channels 58 that may also facilitate cleaning of container 100. For example, drainage channel(s) 58 may lead to port(s) 20. Floor 320 will be described in more details below in relation to FIGS. 16, 17A, 17B and 18. Container 10 may also comprise structural bracing or reinforcement as required to withstand loads (e.g., hydrostatic) imposed by fluid(s) contained in container 10. For example one of more cross braces 60 may be provided and may span between lower side walls 12C and 12A of lower container section(s) 12.

**[0074]** Depending on the configuration of container 100, guide roller(s) 42 may not be required between lower container section(s) 12 and upper container section(s) 14 of container 100. Container 100 may comprise sealing member(s) such as compressible seal(s) 40 disposed for contact between upper container section flange(s) 34 and lower container section flange(s) 36, which are disposed in an
interference relationship. Seal(s) 40 may be pneumatic, as explained above, or non-pneumatic.

[0075] FIGS. 10A, 10B and 10C are side elevation, top plan and end elevation views respectively of container 100 in the extended configuration. FIG. 11 is a cross-sectional view of container 100 taken along line 11-11 of FIG. 10B. FIG. 12 is a cross-sectional view of container 100 taken along line 12-12 of FIG. 10A. FIGS. 11 and 12 show that when upper container section(s) 14 is in the extended position, seal(s) 40 may be compressed between lower container section flange(s) 36 and upper container section flange(s) 34. Accordingly, seal(s) 40 may prevent fluid leakage from expanded container space(s) 15 between lower container section(s) 12 and upper container section(s) 14 when upper container section(s) 14 is/are in the extended position and a level of fluid(s) exceeds an uppermost height of lower container space(s) 15A.

[0076] FIGS. 13A and 13B are axonometric views of an exemplary skid(s) 16 for container 100. FIG. 13B is a detailed view of skid(s) 16 in area 13B shown in FIG. 13A. FIGS. 14A and 14B are side elevation and top plan views respectively of skid(s) 16. Skid(s) 16 may support lower container section(s) 12 and upper container section(s) 14 of container 10 to serve as a base for engaging with the ground during use and may also facilitate transport of container 10 by, for example, a flatbed truck (not shown). For example, lower container section(s) 12 may or may not be secured to skid(s) 16 according to conventional or other methods such as welding and/or with the used of suitable fasteners.

[0077] Skid(s) 16 may comprise a plurality (e.g., at least two) support beams 62 extending longitudinally along skid(s) 16 and a number of cross support pieces 64 extending between and being secured to support beams 62. For example, support beams 62 may comprise one or more steel I-beams (also known as H-beams) that are spaced apart across a width of skid(s) 16. Cross support pieces 64 may be secured to support beams 62 by conventional or other methods. For example cross support pieces 64 may be secured to support beams 62 using coped type joints and welding or other suitable means of securing. The assembly of support beams 62 and cross support pieces 64 may form a substantially rigid structure.

[0078] FIG. 15 is a cross sectional view of skid(s) 16 taken along line 15-15 of FIG. 14B. As shown, skid(s) 16 may be configured to accommodate the sloped floor(s) 320 of container 100. Accordingly, the overall thickness of skid(s) 16 near the
middle of the width of skid(s) 16 may be less than the thickness of skid(s) 16 near the laterally outward portions of skid(s) 16. For example, skid(s) 16 may comprise four support beams 62 including two laterally opposite outer beams 62A and two inner beams 62B disposed between the two outer beams 62A, and, the two inner beams 62B may each have an overall height that is less than the overall height of each of the laterally opposite outer beams 62A.

[0079] Skid(s) 16 may define an overall shape that is generally similar to that of container 10, 100. For example, for a container 10, 100 having a floor 320 and/or a lower container section 12 of rectangular shape, an associated skid 16 may also have a generally corresponding rectangular shape of similar or different size.

[0080] Alternatively, skid(s) 16 and container(s) 10, 100 may be sized and configured so that skid(s) 16 may receive a plurality of containers 10, 100 thereon. For example, it may be appropriate to have a plurality of containers 10, 100 of substantially square (or other) overall shape disposed on a single skid 16 having an overall elongated shape. In such configuration, it may be appropriate to have the plurality of containers 10, 100 associated with a common actuation system (e.g., actuator(s) 18) so that corresponding upper container sections 14 may be raised and lowered substantially simultaneously, or, alternatively, it may be appropriate to have the plurality of containers 10, 100 associated with independent actuation systems (e.g., actuator(s) 18) so that corresponding upper container sections 14 may be raised and lowered independently from each other in order to permit each of the plurality of containers to be used separately if desired. In any event, skid(s) 16 may have an overall shape that makes efficient use of space available at the well site.

[0081] FIG. 16 is an axonometric view of an exemplary floor(s) 320 for container 100. FIGS. 17A and 17B are side elevation and top plan views respectively of floor(s) 320. FIG. 18 is a cross sectional view of floor(s) 320 taken along line 18-18 of FIG. 17A. Floor(s) 320 may have an overall elongated (e.g., oblong) shape and/or may define a multi-sided shape (e.g., polygon, rectangular, square) or other suitable shape. For example, the overall shape of floor(s) 320 may be selected so that container 100 may make an effective use of space at the well site, especially when a plurality of containers 100 are required. For example, a plurality of rectangles (including squares) of a particular specific area can make more efficient use of a given space than a plurality of circles of the same particular area. Accordingly, a plurality of rectangular containers 100, each of a particular height and capacity, may make more
efficient use of the area provided at the well site than a plurality of circular containers having the same particular height and capacity. The overall shape of floor(s) 320 may also be selected so that container 100 may be relatively easily transported to and from the well site.

[0082] For example, floor(s) 320 may define an overall multi-sided shape and lower container section(s) 12 may have a corresponding number of lower side-walls 12A-12D. Some or all of lower side walls 12A-12D may be substantially planar. Some of lower side walls 12A-12D may be substantially parallel. For example, floor(s) 320 and lower side wall(s) 12A-12D may define substantially elongated lower container space(s) 15A where two opposed, longitudinal lower side walls 14A-14C may be substantially planar and parallel to each other. For example, floor(s) 320 and lower side wall(s) 12A-12D may define multi-sided lower container space(s) 15A where adjacent lower side wall(s) (e.g., 12A and 12B; 12B and 12C; 12C and 12D; 12D and 12A) may be substantially perpendicular to each other. Accordingly floor(s) 320 and lower side wall(s) 12A-12D may define lower container space(s) 15A having an overall rectangular (including square) shape and footprint. Upper container section(s) 14 may have a generally similar shape as lower container section(s) 12. As explained above, container 10, 100 may provide more fluid storage capacity per unit land area than conventional containers.

[0083] Floor(s) 320 may be sloped toward a collection region (e.g., sump) in order to facilitate cleaning and/or draining of container 10. For example, floor(s) 320 may be sloped toward drainage channel(s) 58. For example, floor(s) 320 may define a generally rounded or V-shaped bottom for container 10. Accordingly, floor(s) 320 may comprise floor panel(s) 66 disposed laterally from drainage channel(s) 58 and sloped toward drainage channel(s) 58 (see FIG. 18). Drainage channel(s) 58 may be substantially in line with port(s) 20 so than draining of container 100 may be done via sloped panel(s) 66 into drainage channel(s) 58 and out of port(s) 20. Floor(s) 320 may also comprise back plate(s) 68 at one end of drainage channel(s) 58 in the case where no port(s) 20 is/are located at that particular end of container 100.

[0084] On site, container(s) 10, 100 may be placed on a rig mat foundation (not shown). Once installed, container 10, 100 may be placed in its extended configuration as shown in FIG. 2 by raising upper container section(s) 14 using actuator(s) 18 described above. Upper container section(s) 14 may be positively locked in position via lock pin(s) 46. Depending on the type of sealing member(s) 40,
50 used, it may be required to inflate seal(s) 40 to prevent fluid leakage from expanded container space(s) 15 between lower container section(s) 12 and upper container section(s) 14. If sealing membrane(s) 50 is/are used, it/they may unfold as upper container section(s) 14 is/are raised relative to lower container section(s) 12 in a telescopic manner and as fluid (e.g., fracturing fluid, water) is injected into container 10, 100. Container 10, 100 may be connected to piping used to fill or drain container 10, 100 of fluids via port(s) 20 as is done using conventional rectangular containers as required for the particular well stimulation (e.g., hydraulic fracturing) operation.

[0085] Lug(s) 26 may permit container 10, 100 to be attached to a cable and handled with suitable equipment. Container 10, 100 may be placed on skid(s) 16, or, alternatively the bottom of container 10, 100 may be sufficiently reinforced so that skid(s) 16 may not be required. Container 10, 100 may transported by a truck, which may be a tractor trailer combination, having a flatbed. Vehicles of this type may be called bed trucks, winch tractors, winch trucks or similar names. The bed of such vehicles may have a first roller at one end and, typically, a second roller part way along the length of the bed. The front of the bed, or the tractor, may have a winch.

[0086] Container 10, 100 may be loaded by backing the bed of the truck up to the end of container 10, 100 and connecting the winch cable to lug(s) 26 or to skid(s) 16 below the container 10. Pulling in the winch cable may first pull the truck back toward container 10, 100 and then lift one end of the container 10, 100 up and over the first roller. Container 10, 100 may then be moved further on to the bed by backing up the truck. When the first roller is near the middle of container 10, 100, container 10, 100 may then pivot downward to lie flat on the bed. A slight forward movement can soften the fall of container 10, 100 onto the bed. The winch cable may be pulled in further to advance container 10, 100 along the bed if container 10, 100 needs to be transported over a long distance.

[0087] Alternatively, to move container 10, 100 over a short distance or position it on a site, the winch cable may be brought in by a small amount while container 10, 100 is leaning against the first roller to balance container 10, 100 on the first roller rather than dropping container 10, 100 on to the bed. Container 10, 100 may be moved in this position and easily unloaded by loosening the winch cable until one end of container 10, 100 touches the ground and then driving the truck away.

[0088] To unload container 10, 100 from a fully loaded long distance transport position, the truck may be reversed and its brakes applied hard. The momentum of
container 10, 100 may cause it to move backward on the bed. Two or three repetitions of these steps may be required until one end of container 10, 100 travels to the end of the winch line, which may be set to allow container 10, 100 to pivot on the first roller. Container 10, 100 may be moved into a final position while it balances on the first roller. Letting the winch cable out further may allow one end of container 10, 100 to contact the ground. The truck may then drive ahead to complete unloading container 10, 100.

[0089] Alternatively, container 10, 100 may be configured to have a rear axle allowing container 10, 100 to be moved by a fifth wheel tractor truck.

[0090] Containers 10, 100 described herein may have two or more telescoping sections 12, 14. Each of the sections 12, 14 may be four-sided (e.g., rectangular, square) and container 10, 100 may be transported, for example by truck, in its retracted configuration (see FIG. 1). When upper container section(s) 14 is/are raise to its/their extended position(s) on site, container 10, 100 may have an expanded container space(s) 15 that is larger than lower container space(s) 15A. For example, expanded container space(s) 15 may be about double lower container space(s) 15A. Also, when upper container section(s) 14 is/are raise to its/their extended position(s), the height of container 10, 100 may be about double the height of conventional rectangular containers. Accordingly, the number of containers 10, 100 required for a typical well stimulation operation may be less than the number of conventional containers that would otherwise be required and transportation costs and truck movements on the drilling pad may be reduced relative to typical containers having a capacity of 400 and 500 barrels. Also, the amount of space occupied on site, and the area of mat foundation, may be significantly reduced (e.g., may be approximately cut in half).

[0091] The above description is meant to be exemplary only, and one skilled in the relevant arts will recognize that changes may be made to the embodiments described without departing from the scope of the invention disclosed. For example, sealing members described herein (such as pneumatic seal 40 and sealing membrane 50) could also be used in conjunction with telescopic containers of other shapes (e.g., foot print) that may not necessarily be elongated or multi-sided. The present disclosure may be embodied in other specific forms without departing from the subject matter of the claims. One skilled in the relevant arts will appreciate that while the systems, devices and assemblies disclosed and shown herein may comprise a
specific number of elements/components, the systems, devices and assemblies could be modified to include additional or fewer of such elements/components where applicable. For example, while any of the elements/components disclosed may be referenced as being singular, it is understood that the embodiments disclosed herein could be modified to include a plurality of such elements/components. The present disclosure is also intended to cover and embrace all suitable changes in technology. Modifications which fall within the scope of the present invention will be apparent to those skilled in the art, in light of a review of this disclosure, and such modifications are intended to fall within the appended claims.
WHAT IS CLAIMED IS:

1. A telescopic container for fluid associated with hydrocarbon production, the container comprising:
   a lower container section comprising a floor having an elongated shape, the lower container section defining a lower container space;
   an upper container section moveable between a retracted position and an extended position in a telescopic manner relative to the lower container section; and
   a sealing member;
   wherein while the upper container section is disposed in the extended position, the lower container section, the upper container section and the sealing member cooperate to define an expanded container space larger than the lower container space; and
   wherein the sealing member is configured to prevent or substantially prevent leakage of fluid from the expanded container space between the upper container section and the lower container section.

2. The container as defined in claim 1, wherein the floor has a substantially rectangular shape.

3. The container as defined in claim 1, wherein the lower container section comprises at least two lower side walls that are substantially parallel.

4. The container as defined in claim 1, wherein an overall height of the container is increased when the upper container section is moved from the retracted position to the extended position.

5. The container as defined in claim 1, wherein the sealing member comprises a membrane, and while the upper container section is disposed in the extended position, the membrane is configured to line inside surfaces of the lower container section and the upper container section for defining the expanded container space.

6. The container as defined in claim 1, wherein the sealing member comprises a seal, wherein, while the upper container section is disposed in the extended position,
the seal is disposed between the lower container section and the upper container section.

7. The container as defined in claim 6, wherein the seal is pneumatic.

8. The container as defined in claim 7, wherein:
   the lower container section comprises at least one lower section flange and the upper container section comprises at least one upper section flange;
   the at least one upper section flange and the at least one lower section flange are disposed in an interference relationship preventing extension of the upper container section beyond the extended position;
   the pneumatic seal is disposed between the at least one upper section flange and the at least one lower section flange;
   the lower container section comprises a plurality of lower side walls and the upper container section comprises a plurality of upper side walls; and
   the upper side walls, lower side walls and flanges at least partially enclose the pneumatic seal when the upper container section is in the extended position.

9. The container as defined in claim 1, wherein the lower container section is disposed inside of the upper container section when the upper container section is in the retracted position.

10. The container as defined in claim 1, wherein the expanded container space has a capacity of at least 1000 barrels.

11. The container as defined in claim 1, having an overall length of at least 45 feet (13.7 meters).

12. The container as defined in claim 11, having an overall height of at least 15 feet (4.7 meters) when the upper container section is in the extended position.

13. The container as defined in claim 1, comprising at least one guide member for guiding movement of the upper container section relative to the lower container section.
14. The container as defined in claim 13, wherein the at least one guide member includes at least one roller.

15. The container as defined in claim 1, comprising at least one actuator for moving the upper container section from the retracted position toward the extended position.

16. The container as defined in claim 15, wherein the at least one actuator comprises at least one of a hydraulic actuator, a pneumatic actuator and an electric actuator.

17. The container as defined in claim 15, comprising a positive lock mechanism for locking the upper container section in the extended position.

18. The container as defined in claim 1, wherein the sealing member comprises a membrane liner configured to line inside surfaces of the lower container section and of the upper container section, and, a leak sensor is disposed outside of the liner but inside of the lower container section.

19. The container as defined in claim 1, wherein the preventing or substantially preventing of leakage of fluid from the expanded container space between the lower container section and the upper container section, for which the sealing member is configured, is a leakage of fluid when an uppermost level of fluid within the expanded container space is disposed above an uppermost height of the lower container space.

20. A telescopic container for fluid associated with hydrocarbon production, the container comprising:
    a lower container section defining a lower container space having a plurality of lower side walls;
    an upper container section, the upper container section being movable between a retracted position and an extended position in a telescopic manner relative to the lower container section; and
    a sealing member;
wherein the lower container section, the upper container section and the sealing member cooperate to define an expanded container space greater than the lower container space when the upper container section is in the extended position; and
wherein the sealing member is configured to prevent or substantially prevent leakage of fluid from the expanded container space when the upper container section is at the extended position and a level of fluid inside the expanded container space exceeds an uppermost height of the lower side walls.

21. The container as defined in claim 20, wherein the lower side walls define a substantially rectangular shape for the lower container space.

22. The container as defined in claim 20, wherein the sealing member comprises a membrane liner configured to line inside surfaces of the lower container section and of the upper container section.

23. The container as defined in claim 20, wherein the sealing member comprises a compressible seal between the lower container section and the upper container section.

24. The container as defined in claim 23, wherein the sealing member comprises a membrane liner configured to line inside surfaces of the lower container section and of the upper container section.

25. The container as defined in claim 24, wherein the seal is inflatable.

26. The container as defined in claim 24, comprising guide rollers disposed between the lower container section and the upper container section.

27. The container as defined in claim 20, comprising at least one actuator for moving the upper container section toward the extended position.

28. The container as defined in claim 20, wherein the lower container section is disposed inside of the upper container section when the upper container section is in the retracted position.

29. The container as defined in claim 20, wherein the container is configured to be transported by a flatbed truck.
30. The container as defined in claim 20, wherein at least two of the plurality of lower side walls are substantially planar.

31. The container as defined in claim 20, wherein the lower container section has an elongated shape.

32. The container as defined in claim 20, wherein an overall height of the container is increased when the upper container section is moved toward the extended position.

33. The container as defined in claim 20, wherein the preventing or substantially preventing of leakage of fluid from the expanded container space, for which the sealing member is configured, is a leakage of fluid between the lower container section and the upper container section when an uppermost level of fluid within the expanded container space is disposed above the uppermost height of the lower side walls.

34. A telescopic container for fluid associated with hydrocarbon production, the container comprising:
   a lower container section defining a lower container space;
   an upper container section moveable between a retracted position and an extended position in a telescopic manner relative to the lower container section; and
   a pneumatic sealing member;
   wherein while the upper container section is disposed in the extended position, the lower container section, the upper container section and the pneumatic sealing member cooperate to define an expanded container space larger than the lower container space; and
   wherein the pneumatic sealing member is configured to prevent or substantially prevent leakage of fluid from the expanded container space between the upper container section and the lower container section.

35. The container as defined in claim 34, wherein the pneumatic sealing member is disposed between the lower container section and the upper container section.

36. The container as defined in claim 34, wherein:
the lower container section comprises at least one lower section flange and the upper container section comprises at least one upper section flange;
the at least one upper section flange and the at least one lower section flange are disposed in an interference relationship preventing extension of the upper container section beyond the extended position; and
the pneumatic seal is disposed between the at least one upper section flange and the at least one lower section flange.

37. The container as defined in claim 36, wherein:
the lower container section comprises a plurality of lower side walls and the upper container section comprises a plurality of upper side walls; and
the upper side walls, lower side walls and flanges at least partially enclose the pneumatic seal when the upper container section is in the extended position.

38. The container as defined in claim 37, comprising a membrane liner configured to line inside surfaces of the lower container section and of the upper container section.

39. The container as defined in claim 37, wherein the pneumatic sealing member extends peripherally about the lower container space.

40. The container as defined in claim 34, wherein the preventing or substantially preventing of leakage of fluid from the expanded container space between the lower container section and the upper container section, for which the pneumatic sealing member is configured, is a leakage of fluid when an uppermost level of fluid within the expanded container space is disposed above an uppermost height of the lower container section.

41. An assembly for containing fluid associated with hydrocarbon production, the assembly comprising:
a telescopic container for containing fluid, the container comprising a lower container section defining a lower container space and an upper container section moveable between a retracted position and an extended position in a telescopic manner relative to the lower container section, the lower container section and the
upper container section together defining an expanded container space larger than the lower container space when the upper container is in the extended position; and

a skid supporting the container, the skid comprising at least two support beams spaced apart across a width of the skid and at least two cross support pieces extending between and being secured to the support beams.

42. The assembly as defined in claim 41, wherein the container comprises a floor that is sloped toward a collection region.

43. The assembly as defined in claim 42, wherein an overall height of the skid is varied across the width of the skid to accommodate the sloped floor of the container.

44. The assembly as defined in claim 41, wherein the skid comprises four support beams spaced apart across a width of the skid.

45. The assembly as defined in claim 44, wherein:

the four support beams of the skid comprises two laterally opposite outer beams and two inner beams disposed between the two outer beams; and

the two inner beams each have an overall height that is less than the overall height of each of the laterally opposite outer beams.
Cut center roll in half at mid-point to allow for pipe nozzle to lay on top.