BEFORE THE STATE OF WASHINGTON
ENERGY FACILITY SITE EVALUATION COUNCIL

In the Matter of: Application No. 2013-01 TESORO SAVAGE, LLC TESORO SAVAGE DISTRIBUTION TERMINAL	CASE NO. 15-001 SWORN PRE-FILED TESTIMONY OF MARC BAYER

I, Marc Bayer, state as follows:

1. I swear under the penalty of perjury of the laws of Washington and the United States that the following testimony is true and correct.

2. I am over eighteen years of age and am otherwise competent to testify in this case. My testimony is based upon my education, training, experience, professional qualifications, and understanding of the matters herein.

3. I am the Senior Director, Shipping Operations, with Tesoro Maritime Company. Based on my professional experiences and training, I have developed an expertise in the shipping and maritime industry including vessel operations and maritime transport of crude oil.

I. QUALIFICATIONS

4. I received my professional training at the California Maritime Academy, in Vallejo California, in 1982. Since graduating I have been involved in the maritime industry and have accumulated 34 years of professional experience in vessels and vessel operations in my various roles. From 1982 through 1992 I sailed as deck officer, in positions ranging from Third Mate through Captain, aboard tankers, OBOs, bulk carriers, general cargo ships, cruise ships, and OSVs that ranged in size from 16,000 to 190,000

Van Ness Feldman LLP
719 Second Avenue Suite 1150
Seattle, WA 98104
(206) 623-9372

Dead Weight Tonnage (DWT). I have been licensed as: U.S. Coast Guard Master Steam or Motor Vessels of any Gross Tons upon Oceans; Panama Primer Oficial de Cubierta 1983; and Liberia Third Mate 1982.

5. From 1992 through 2001, I worked for BP Oil Company and its subsidiary Alaska Tanker Company. In my capacity for these companies I was responsible for technical management of the Alaska North Slope BP Time Chartered Tankers as well as the inland river and west coast tank barges, towing vessels and other related vessel responsibilities.

6. In 2001 I started to work for Ultramar Diamond Shamrock at the Martinez California refinery which became Valero for 6 months after which it was sold to Tesoro Refining & Marketing Company.I was Manager of West Coast Shipping Operations from March 2007 through April 2011, and Manager Marine Assurance from May 2002 to March 2007. In those positions I was responsible for marine operations for Tesoro in the west coast region, including ship inspection and vetting operations, oil spill response and emergency vessel operations, commercial marine service contracts and lightering.

7. Since 2011, I have held several management roles with increasing levels of responsibility within Tesoro Maritime Company (Tesoro). In each of these roles I have become intimately familiar with vessel and port operations related specifically to the various vessels Tesoro uses to ship its feedstocks and products. I was the Director Shipping Operations for Tesoro Maritime Company April 2011 through December 12, 2014. In that position I was responsible for all Tesoro waterborne transportation and marine loss control including operation and maintenance of the Tesoro single point mooring in Barbers Point HI and four mooring master/pilots prior to the sale of Tesoro HI until Dec. 31, 2013. The marine operations group consists of commercial operations, vetting, clearance and inspection, loss control, terminal operations, lightering, and spill

Van Ness Feldman LLP
719 Second Avenue Suite 1150
Seattle, WA 98104
(206) 623-9372

response including managing all marine support services and contracts including, tug assist, agents, inspection companies and spill response.

8. In my current position with Tesoro as Senior Director of Shipping Operations, I am responsible for all Tesoro waterborne transportation. I am Tesoro's subject matter expert for marine operations. My day to day responsibilities include oversight of all Tesoro shipping operations worldwide including the Columbia and Willamette Rivers. I lead the marine operations group and am responsible for:

- Commercial Marine Operations, which involves day-to-day voyage management of all Time and Spot Chartered ships, tugs, barges and ATB's;
- Marine Assurance, including clearance and inspection of all vessels, terminals, marine vendors, ship owners and service providers;
- Loss Control, including cargo reconciliation, custody transfer, quality and inspector oversight and control; and
- Marine Operations which includes terminal operations interface, ship-to-ship lightering, spill response and management of all marine support services and contracts including, tug assist, agents, and inspection companies.

9. In my career, I have been involved in many professional and industry associations, including work with entities that act to improve safe maritime operations like several Harbor Safety Committees (Lower Columbia River, Cook Inlet, San Francisco, Long Beach and Puget Sound) and several Oil Spill Cooperatives (Clean Sound Oil Spill Cooperative, Puget Sound; Clean Bay Oil Spill Cooperative, San Francisco; and Clean Coastal Waters Oil Spill Cooperative, Los Angeles/Long Beach) that have all since been merged into the Marine Spill Response Corporation ("MSRC").

Van Ness Feldman LLP
719 Second Avenue Suite 1150
Seattle, WA 98104
(206) 623-9372

10. As Tesoro's subject matter expert on marine operations, I am familiar with the Vancouver Energy Project. I have worked directly with the United States Coast Guard (USCG), Port of Vancouver, Columbia River and Bar Pilots and local marine partners to develop voyage plans for the river and bar for project shipping. I have worked directly with Savage counterparts and consultants to development the design and operation of the marine terminal including review and approval of the vessel type and operation in the river and berth, marine assurance, terminal design and operations. Additionally, I have been appointed to represent WSPA on the DOE sponsored Columbia River Safety Assessment. During my sailing career I transited the river many times from cadet to Captain.

II. DESCRIPTION OF VESSEL TYPES THAT WILL CALL AT THE FACILITY

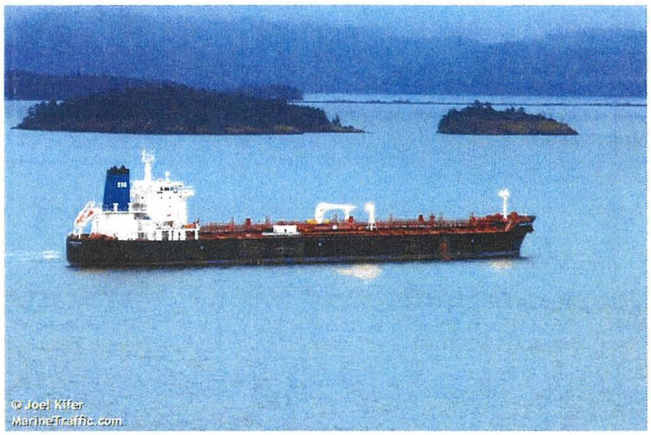
11. When operational, several vessel types will likely call at the facility. Tanker vessels are described in terms of the amount of cargo they can carry. For purposes of oil tankers that can be expressed in either DWT or the barrels (BBL) of oil. To be clear, the DWT of a vessel does not include the weight of the ship. In the paragraphs below, I have included photographs of representative vessels that I am including for illustrative purposes. I obtained the photographs from a website that tracks marine vessel traffic, http://www.marinetraffic.com/en/. I am familiar with and have been on board each of the specific vessels shown in these photographs. Tesoro has chartered each of the vessels depicted in these photographs multiple times. I certify that these photographs are accurate depictions of the various vessels identified in the paragraphs below.

12. ATBs: The facility may receive articulated tug barges (ATBs), ATBs are smaller vessels of approximately 25,000 DWT. While the facility can receive ATBs it is

Van Ness Feldman LLP
719 Second Avenue Suite 1150
Seattle, WA 98104
(206) 623-9372

more likely that the facility will be served by any of the larger tank vessels described below.

13. 46,654 DWT: These vessels have a cargo capacity of 330,945 bbl.



14. 105,278 DWT with a cargo capacity of 818,418 bbl.

Van Ness Feldman LLP
719 Second Avenue Suite 1150
Seattle, WA 98104
(206) 623-9372

15. 164,746 DWT with a cargo capacity of 1,102,244 bbl.

16. Currently, all tanker vessel traffic on the Columbia River is limited to 300,000 bbls of cargo. That limitation is set based on existing response capabilities identified in contingency plans. Specifically, the limitation is based on an umbrella plan provided by the Maritime Fire & Safety Association ("MFSA") that most commercial vessels on the Columbia utilize to satisfy response obligations. Thus the standard for the Columbia is currently set at 300,000 bbls based on MFSA's response contingency plan.

17. There is a process to change that planning standard. TSPT intends to work with agencies and response entities to revise the marine vessel spill response planning standard for the Columbia River to 600,000 bbls. To do this, TSPT needs to work with the Oil Spill Response Organizations ("OSROs") operating on the River (including Clean Rivers and MSRC) and MFSA to purchase and stage equipment adequate to respond to the larger planning standard and, ultimately, modify the umbrella plan to reflect those changes.

18. The change to 600,000 bbls is achievable and will provide an added level of safety for tank vessels. When implemented, the maximum volume allowed to be loaded on any vessel will be 600,000 bbls, regardless of the vessel's carrying capacity.

Van Ness Feldman LLP
719 Second Avenue Suite 1150
Seattle, WA 98104
(206) 623-9372

For the larger vessels the approximate maximum volume they can load and not exceed the 43' fresh water draft is approximately 600,000 bbls. For the larger ships a greater Under Keel Clearance ("UKC") may be desired by the ship master, technical manager and Tesoro/Savage during vessel transit. UKC is the distance between the deepest point on the vessel and the bottom of the channel in still water conditions. The river is dredged to provide a 43' fresh water draft at 0 river gauge. The actual depth of the river at its lowest point with 43' fresh water draft at 0 river gauge is 45'. To accommodate the larger vessels and provide for a greater UKC based on the river depth and river level Tesoro is limiting the ships to 600,000 bbls response planning standard which provides an added safety factor.

19. For a 46 MDWT tanker the maximum volume is 319,000 bbls with a fresh water draft of 41' which at 0 river gauge provides a 4' UKC which is 2' more than required by the River and Bar pilots and the Harbor Safety plan. The actual UKC could be more or *slightly* less depending on the river level but at no time will it be less than 2'. I created the graph below using information about the three ships depicted above from the ships' capacity plan. The capacity plan is an engineered drawing specific to each vessel that is utilized to plan the cargo and ballast conditions and identify draft, taking into account salinity of the water. The graph shows the ship's draft in increments of 1 foot for each loaded volume of Bakken crude. As noted in the below graph the actual draft for the larger ships will be less than 43' fresh water with 600,000 bbls on board therefore increasing the UKC by an equivalent amount.

Van Ness Feldman LLP
719 Second Avenue Suite 1150
Seattle, WA 98104
(206) 623-9372

Ship	Arrival Condition Columbia River Bar				Columbia River Transit Condition				FW 38' 00" (11.583m)			FW 39' 00" (11.887m)			FW 40' 00"(12.192m)			FW 41' 00" (12.497m)		
	Displacement	Mean Draft	Draft Fore	Draft Aft	Displacement (FW)	Mean Draft	Draft Fore	Draft Aft	Displacement (FW)	Total MT	Bakken - API 40 Table 13 Bbls	Displacement (FW)	Total MT	Bakken - API 40 Table 13 Bbls	Displacement (FW)	Total MT	Bakken - API 40 Table 13 Bbls	Displacement (FW)	Total MT	Bakken - API 40 Table 13 Bbls
160 MDWT	78,671	28' 00"	24' 00"	32' 00"	78,671	28'00"	24' 00"	32'00"	109,751	87,000	616,159	113,051	90,300	639,531	115,951	93,200	660,535	119,351	96,600	685,160
115 MDWT	57,782	23' 07"	19' 05"	26' 08"	50,472	20' 06"	14' 00"	27' 00"	98,272	79,600	592,955	101,472	82,800	585,210	103,972	85,300	603,317	106,972	88,300	625,045
46 MDWT	32,060	24' 10"	22' 11"	25' 08"	23,900	19' 00"	12' 00"	26' 00"	51,696	41,500	301,826	53,196	43,000	296,951	54,696	44,500	307,815	56,368	46,172	319,925

III. DESCRIPTION OF VESSEL MOVEMENTS TO AND FROM THE VANCOUVER ENERGY TERMINAL

20. Vessels traveling to the Terminal transit the outer Pacific coast at a minimum of 50 nautical miles from land. Approximately 8 to 10 nautical miles southwest of the entrance to the Columbia River Bar the ship will pick up a Columbia River Bar Pilot by boat or helicopter depending on the bar conditions to guide the ship into the river across the bar to Astoria where a Columbia River Pilot will board by boat and relieve the Bar Pilot for transit to the Port of Vancouver.

21. During the transit up river the ship will be guided by the River Pilot. In the vicinity of Kelly Point at the confluence of the Willamette and Columbia Rivers about 3.5 miles from the terminal the ship will be met by two docking tugboats which will assist the ship to maneuver alongside the terminal port (left) side to the dock. Line handlers will meet the ship and retrieve the lines from the vessel and place the lines on the shore mooring hooks. The mooring lines will be monitored with a Mooring Line Management System to assist the vessel and shore in maintaining the proper tension on the lines to keep the ship tight alongside throughout all phases of the loading operation.

Van Ness Feldman LLP
719 Second Avenue Suite 1150
Seattle, WA 98104
(206) 623-9372

22. Once the ship is all fast at the dock (tied up) the Terminal Person in Charge (TPIC) will instruct the booming contractor that the mooring lines are in place and the vessel is finished mooring (all fast) and that the boom is to be deployed around the vessel. Boom anchors and anchor buoys will be positioned and set in three locations on the offshore side of the ship in order to secure the boom; one on the starboard quarter, one midship on the starboard side and one on the starboard bow. The boom will then be towed into position and secured to the anchors with the necessary standoffs to keep the boom off the side of the vessel. The trailing or downriver side of the boom on the starboard (right) quarter of the ship will then be connected to the permanent fence boom that runs on the inboard (port side) of the vessel and the section of boom anchored on the starboard bow will be connected to the upriver side of the fence boom permanently installed on the inboard (port side of the vessel). This process will ensure that the vessel is fully encapsulated by boom.

23. Once the boom is in place the TPIC will communicate with the Vessel Person In Charge (VPIC) and arrange to connect the terminal cargo and vapor hoses to the ship. During the connection the VPIC will ensure that the hoses are properly connected with new gaskets and fully tightened and supported.

24. The TPIC and VPIC will conduct a walk around of the vessel deck to ensure that all safety devices are in place and functioning before heading to the ships office to conduct the Declaration of Inspection (DOI) and the Key Meeting. This is where the Vessel and Terminal Persons In Charge discuss the loading plan, start and stop procedures, topping off procedures and communications protocols and expected time alongside.

25. Once the Key Meeting and DOI are completed the Terminal will ask the vessel to let them know when they are ready to receive cargo. The ship will check the

Van Ness Feldman LLP
719 Second Avenue Suite 1150
Seattle, WA 98104
(206) 623-9372

lineup of the valves and open the manifold and communicate "we are open and ready to receive cargo". The shore will start the cargo flowing towards the vessel at a slow rate and ask the ship to tell them when they confirm flow into the cargo tanks. Once confirmation is received from the ship the VPIC will ask the TPIC to slowly come up to maximum rate. At this time the bulk transfer will begin. The ship and the shore will be monitoring progress throughout the transfer and comparing quantities delivered and received every hour. When the ship gets close to the point where they are finishing (topping tanks) the rate will be slowed down in order to bring them up to their stop ullages (levels) in a controlled fashion. On completion of the loading the cargo hoses will be carefully drained and blanked before returning them to the shore stowage position.

26. During the transfer operation the weather and river bar conditions are continually monitored and assessed and coordination is kept between the vessel agents, River Pilots, and Bar Pilots to ensure that the loaded vessel does not leave the terminal berth until it can proceed directly to sea so as to avoid anchoring in the River en route. The River has designated anchorage areas where a stern buoy is available that allows the vessel to put out a stern line so that the vessels does not veer back and forth in the river. Loaded vessels sit deeper in the water and are heavier and are more affected by current than empty vessels and therefore can drag anchor and move during periods of high current or inclement weather. It is therefore the practice to not anchor loaded ships unless in an emergent situation. Therefore, Applicant Tesoro Savage Petroleum Terminal LLC, d/b/a Vancouver Energy (TSPT) will only sail a loaded vessel directly to sea and not anchor it to wait for the next weather window in order to load another ship at the berth. In other words, TSPT will hold a loaded ship at the berth until it can depart directly to sea.

27. Once the determination is made that the ship can leave the berth and proceed to sea the River Pilot is scheduled to board for the appropriate departure window.

Van Ness Feldman LLP
719 Second Avenue Suite 1150
Seattle, WA 98104
(206) 623-9372

Once the departure time is known the vessel deck and engineering officers test and perform the pre-departure tests. After the cargo hoses have been re-stowed ashore the containment boom is removed and two undocking tugboats are made fast on the starboard side of the ship, one forward and one aft, and the ship's main engine is tested ahead and astern at the dock. At this point all hands will be called on the ship and under the River Pilots direction the lines will be released, retrieved on board. Once the last line is on board the deck officer on the stern will signal to the Captain and Pilot on the bridge via radio that the last line is on board for propeller clearance. The Pilot will then direct the tugboats to pull the vessel off the dock bodily and then turn the vessel to starboard and proceed downriver for Astoria where the Bar Pilot will embark and the River Pilot will disembark. The Bar Pilot will then guide the ship across the Columbia River Bar to the open ocean where he will disembark either by boat or helicopter depending on weather conditions.

28. Ballast water management will be in full compliance with the governing laws whether deep water ocean ballast water exchange or an approved ballast water treatment system is installed. Presently the ballast water regulations require installation of an approved ballast water treatment system by the first scheduled drydock after December 31, 2015. However presently there are no approved ballast water systems but every vessel has an approved ballast water management plan and conducts open ocean exchange. Vessels report how this is managed through mandatory reporting to the USCG and the Department of Ecology (Ecology) as required in their Advanced Notice of Arrival. The USCG enforces the ballast water regulations and Tesoro Vetting (described in further detail below) reviews each vessel for compliance before clearing the vessel for the terminal.

Van Ness Feldman LLP
719 Second Avenue Suite 1150
Seattle, WA 98104
(206) 623-9372

IV. RULES AND REGULATIONS GOVERNING SAFE VESSEL TRANSPORTATION

29. Several regulations and statutes govern vessel design and vessel operations that ensure safe vessel operations and reduce impacts of potential incidents. Many are described in the Vancouver Energy Terminal Quantitative Vessel Traffic Risk Assessment (VTRA) that is attached to the testimony of Dennis O'Mara. In this testimony, I highlight several, from my professional standpoint to describe how they affect vessel operations and improve safety. Collectively, these measures create the safest operating environment possible, especially when combined with Tesoro's commitment to environmental stewardship and safety. These measures adequately mitigate the risk of an incident and include adequate protection in the event an incident occurs. A marine superintendent and loss control specialist will be located at the terminal to make sure that these measures are implemented and that the operations are conducted consistent with Tesoro's Principles of Operation and Tenets of Safe Operation, which are attached hereto as Attachment A.

A. Tanker design

30. All vessels calling to the facility will be fully USCG, IMO, and class compliant and built to meet OCIMF recommendations. The design will be double-hull. The double-hull design is statutory requirement that is the result of significant effort to prevent spills and involved engineering input at the IMO level. The storage area is compartmentalized within the double hull to ensure that any breach will only implicate a portion of the cargo and most of it would be captured in the double hull. I have included an image of a cross-section of a tank vessel depicting the double-hull design, which I have included for illustrative purposes. I am familiar with the double-hull design represented by this depiction and certify that this is an accurate depiction of the double-hull design.

Van Ness Feldman LLP
719 Second Avenue Suite 1150
Seattle, WA 98104
(206) 623-9372

31. All Tesoro Vetting approved vessels will have a Condition Assessment Program rating of 1 for hull, machinery and cargo (the highest rating – equivalent to a new vessel). Vessel systems will be designed to eliminate the passage of cargo lines through ballast tanks and vice versa. Main engines and fuel will be compliant with requirements of the Emissions Control Area and will meet or exceed emissions thresholds.

B. Tug escort

32. Loaded vessels departing from the facility will be escorted by a suitably matched tug. This is not currently required under regulations, but will be implemented by TSPT for all loaded vessels departing from the facility. DNV GL modelled the effect of this safeguard in VTRA section 9.2. The report concludes that it will result in a 91.45% reduction in grounding.

C. TSPT Vetting Policy

33. Vetting protocols protect against "problem" vessels. A vetting system is in place to ensure that vessels and their crew arriving at the facility comply with applicable International, National, Local and Terminal rules, regulations, and accepted industry practices in respect to safety, pollution prevention and operational procedures. Additionally, vetting ensures that a ship can safely arrive, moor, transfer, and depart

Van Ness Feldman LLP
719 Second Avenue Suite 1150
Seattle, WA 98104
(206) 623-9372

taking into account the vessel, size, draft, mooring capabilities, and pumping capabilities. The vetting policy that will be used at the Vancouver Energy Terminal will be the same as the one used by Tesoro at other facilities. Tesoro's policy is reviewed and approved annually to ensure it is a living document that is continually improved. This review and adoption cycle is currently underway with approval scheduled this month. A copy of the vetting policy that is scheduled for approval is attached hereto as Attachment B.

34. In general, the vetting document addresses how TSPT view ships, tugs, barges, ATBs, service providers as well as vendors terminals and agents. In the vetting process every vessel is reviewed and must provide proof of a valid Certificate of Financial Responsibility or it is not cleared for the terminal. It is a standard part of the vetting process.

D. Port state control

35. The port state control (PSC) is generally defined as the USCG or any USCG-type agency worldwide who verify and certify that all vessels including tank vessels comply with all applicable international conventions, U.S. laws, and U.S. regulations and are maintained and operated with properly licensed and trained crews. In the United States the USCG is considered that agency but in Washington, California, and Alaska there are other agencies that duplicate some of these functions. For example in Washington, Ecology duplicates some of those functions. Similarly, in California there is the Office of Spill Prevention and Response and the California State Lands Commission; Alaska has the Department of Environmental Conservation. US flag vessels fall under the authority of the Coast Guard who inspect and provide a Certificate of Inspection (COI), the USCG also work closely with foreign flag vessels and annually conducts and issues a Certificate of Compliance (COC formally known as a TVEL – Tank Vessel Examination Letter). The purpose of the COI and COC is to annually inspect and ensure compliance

Van Ness Feldman LLP
719 Second Avenue Suite 1150
Seattle, WA 98104
(206) 623-9372

with all applicable safety, pollution prevention, training, and emergency response regulations, including The US Environmental Protection Agency's regulations for operating in North American Emission Control areas. The PSC also has the goal of regulating shipping to reduce deaths and injuries; loss of or damage to property or the marine environment; and disruptions to maritime commerce. In addition to the certification of vessels the PSC exams focus on those vessels most likely to be substandard, based on identified risk factors. When vessels that are not in compliance with applicable laws or regulations are identified, the USCG imposes controls until the substandard conditions have been rectified and the vessels are brought into compliance. The goal of the PSC program is to identify and eliminate substandard ships from U.S. waters.

E. Columbia River and bar pilots

36. The Columbia River Pilots (COLRIP) is an association of 45 professional mariners licensed by the State of Oregon to provide maritime pilotage services to all ports in Washington and Oregon from Astoria to the head of navigation on the Columbia and Willamette Rivers. With few exceptions, the focus is on service to ocean going vessels from Astoria upstream to the Interstate 5 highway bridge.

37. COLRIP pilots have extensive navigational experience, local knowledge and ship-handling skills and are charged with safely and efficiently piloting vessels in all weather conditions, day and night, 365 days a year. COLRIP members are licensed and highly regulated by the Oregon Board of Maritime Pilots, a professional licensing and regulatory agency whose primary consideration is public safety. COLRIP pilots are also licensed and regulated by the United States Coast Guard.

38. COLRIP's main office is located in the Rivergate District of North Portland and Pilots are dispatched from this facility. All vessels are tracked and

Van Ness Feldman LLP
719 Second Avenue Suite 1150
Seattle, WA 98104
(206) 623-9372

coordinated as they arrive, anchor, shift between berths or depart. COLRIP's Pilot Station is located on the Astoria waterfront. This Astoria facility provides moorage for the pilot launch and sleeping quarters for Pilots awaiting inbound assignments. COLRIP pilots board inbound ships after they have been brought to Astoria from sea by the Columbia River Bar Pilots.

39. The Columbia River Bar Pilots are an organization of 17 State of Oregon and US Coast Guard licensed pilots who are responsible for piloting ocean going vessels transiting the Columbia River Bar. The licensing standard for the Columbia River Bar Pilots is one of the highest in the nation. Each Columbia River Bar Pilot must hold an unlimited master's license and have served a minimum of two years in command as master of oceangoing vessels. Once aboard, the pilot assumes navigational control of the vessel using his or her experience and local knowledge to safely navigate the channels of the Columbia River Bar to and from sea. These experienced Columbia River Bar Pilots guide approximately 3,600 vessel crossings of the bar each year—from 100-foot tugs to 1,100-foot tankers, bulk carriers, car carriers, log ships, general cargo ships, container ships, and passenger ships.

40. The Columbia River Bar Pilots are leaders in developing innovative equipment to work in the heavy weather of their exposed boarding grounds. The Bar Pilots utilize their helicopter SEAHAWK, and two state-of-the-art, 30-knot pilot boats ASTORIA and COLUMBIA to embark and disembark from vessels. The current pilot transfer system enables the Columbia River Bar Pilots to board ships up to 15 miles further from the traditional pilot grounds, ensuring ships have Columbia River Bar Pilots on board prior to entering the close-quarter maneuvering areas near the river's entrance.

Van Ness Feldman LLP
719 Second Avenue Suite 1150
Seattle, WA 98104
(206) 623-9372

41. TV-32: TV 32 is an AIS-based navigation system that COLRIP developed in cooperation with Volpe Center of the U.S Department of Transportation. TV-32 is correctly is a "vessel traffic information service."

42. TV-32 was developed and is maintained with funding provided by long-terms agreements with the Columbia River Steamship Operators Association. A product of a private-public partnership, TV-32 is used by all pilots and is licensed to other commercial operators on the lower Columbia River. The system provides the pilot with real time position, speed, water level and location of his own vessel and other vessels in the system. This unique, cutting edge navigation system has contributed substantially to increased safety on the Columbia River over the last decade and with ongoing, periodic enhancements and upgrades will continue to expand the capacity of the River and its users to accommodate any reasonably foreseeable increases in traffic.

V. ATTACHMENTS

43. The following documents are attached to my testimony for reference:

Attachment A: Principles of Operation and Tenets of Safe Operation

Attachment B: Vetting Clearance Request

Van Ness Feldman LLP

719 Second Avenue Suite 1150
Seattle, WA 98104
(206) 623-9372

DATED this 13th day of May, 2016.

Marc Bayer, Declarant

STATE OF Texas)
)
COUNTY OF Bexar)

I Marc Bayer, being duly sworn upon oath, deposes and says: The foregoing testimony is true, correct and complete to the best of my knowledge, information and belief and is given subject to the laws of perjury in the State of Washington.

GIVEN under my hand and official seal this 13 day of May, 2016.

Monica L. Moton
NOTARY PUBLIC in and for the State of:

Residing at: 5106 Hacienda San Antonio TX 78233
My Commission Expires: January 17, 2020
Printed Name of Notary:
Monica L. Moton

MONICA L. MOTON
Notary Public, State of Texas
My Commission expires
January 17, 2020
ID # 12885272-1

Van Ness Feldman LLP
719 Second Avenue Suite 1150
Seattle, WA 98104
(206) 623-9372