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 JOHN HACK

I, John Hack, 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.

I. EXPERT QUALIFICATIONS

3. Throughout my professional career, I have been involved in train logistics in a variety of capacities and for a variety of companies. Through that professional experience, I have developed expertise in railroad operations and logistics and regulations governing rail operations.

4. I am a veteran of the United States Navy and Operations Iraqi Freedom having served as an Air traffic Controller on active duty between 1999 and 2004. After my honorable discharge in 2004, I trained and qualified to be work as a Train Dispatcher at Union Pacific Railroad in Omaha, Nebraska. In this role, I was required to pass a test and be certified in the General Code of Operation Rules which governs the operations on most Class I railroads in the United States. I was assigned a specific territory to dispatch and during my shifts I was responsible for the safe and expeditious movement of trains

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

across the territory. I was also responsible for the protection of Maintenance of Way employees (employees working on the right of way or working on the tracks) in the territory, the operations of the Centralized Traffic Control ("CTC") system, and the recording and distribution of critical movement information for the territory including speed restrictions and other warnings. In 2006, I became a train dispatcher for BNSF railway in Fort Worth, Texas, where I performed the same duties as I had with Union Pacific. At BNSF, I was assigned to dispatch the Orin Subdivision which is the heaviest rail freight corridor in the world. In my work as a train dispatcher for both companies from 2004 through 2008, I gained expertise in the rail industry and how trains are run on the two major rail carriers in the Western United States. This included an understanding of relationships between and responsibilities of shippers and carriers, as well as train dispatching and movements, including the CTC signaling system, crew hours of service limitations, wayside detector protections, documents that govern the movement of trains over a particular subdivision, and the communication protocol used by the railroads.

5. In 2008 I accepted a position with Ameren Corporation in St. Louis, Missouri. In my role at Ameren, I was responsible for overseeing the movement of coal unit trains from Wyoming's Powder River basin to coal-fired power plants in Missouri and Illinois. In this role, I gained expertise in the rail industry from the shipper's standpoint, including, in particular, unit train economics as well as how shippers utilize railroads to satisfy their requirements for raw materials. I continued in this role until 2013 when I accepted my current role at Tesoro in San Antonio, Texas.

6. I am currently employed as the Senior Manager of Rail Operations at Tesoro Refining & Marketing Company LLC. I began my employment with Tesoro on February 1, 2013. In my current role I am responsible for leading a 7-person team that is responsible for the movement of Tesoro's railcar fleet to satisfy our commercial and

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

refining demands. Some of the relevant duties of my current role include: negotiating with rail carriers; monitoring and implementing state and federal guidelines governing rail; supervising the day to day movement of Tesoro's products by rail; and providing the business need and specifications for all railcar acquisitions. Since 2013, I have had the opportunity to follow the changing regulatory requirements for railcars transporting crude oil. I participate on the American Fuel and Petrochemicals Manufacturer's Rail Policy working group and I played a key role in Tesoro's recent decision to lease DOT 120J200 railcars from Union Tank Car. Through my role with Tesoro, I continued to develop my expertise in the rail industry from the shipper's standpoint, and developed particular expertise in the regulatory requirements governing hazardous material transportation by rail and tank car design.

II. DESCRIPTION OF GENERAL ROLES AND RESPONSIBILITIES OF SHIPPERS AND CARRIERS

7. In general, there are two main entities involved in the movement of freight by rail, and each is responsible for different aspects of the movement: the shipper and carrier. The carrier is always the railroad. The shipper can often be, but is not always, the owner of the commodity. The shipper is the "offeror" of the train (i.e., the entity responsible for offering the train cars to the railroad for delivery into interstate commerce), and there may be more than one offeror for each train. The shipper and carrier are each responsible for different aspects of the rail movement.

8. In the context of shipment of hazardous commodities, like crude oil, the shipper is responsible for the proper classification and packaging of the material prior to offering it to the railroad for transportation. Both of these activities are defined by the code of federal regulations and regulated by the Department of Transportation ("DOT") and its subsidiary agencies, the Federal Railroad Authority ("FRA") and the Pipeline and

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

Hazardous Materials Safety Administration ("PHMSA"). These regulations are commonly referred to as the Hazardous Materials Regulations or "HMR". *See, e.g.,* 49 C.F.R. 173.22.

9. With respect to classification, the shipper must first identify the proper hazard class of the material. There are nine hazard classes that are based on the state of the material at a certain temperature and other characteristics. Crude oil is determined to be a Class 3 hazardous material, which generally refers to a flammable or combustible liquid that does not meet the regulatory classification requirements for other hazardous characteristics, such as toxicity, corrosivity, radioactivity, or explosiveness.

10. Because it is a Class 3 hazardous material, the shipper must also identify the proper packing group. Class 3 hazardous materials are divided by packing groups that are based on the initial boiling point and flash point of the material. The shipper is responsible for confirming and documenting the classification of the cargo through testing and data. Federal regulations require a sampling and analysis plan that sets forth the process by which a shipper confirms the proper classification of a shipper's cargo using protocols that are specified in federal regulations. Most Bakken crude oil meets the standards for Packing Group ("PG") I.

11. In the recent past, some have expressed concern about whether Bakken crude oil has been properly classified, specifically expressing concern over the purported volatility of Bakken. Some of those concerns were expressed and documented in the recent federal rulemaking over tank car specifications, described in further detail below. However, those concerns have since been resolved by repeated analysis and testing that demonstrates Bakken crude oil to be a Class 3 hazardous material, similar to other light sweet crude oils. After considering information, PHMSA Deputy Administrator Timothy Butters testified to Congress that Bakken crude oil is still accurately classified as a Hazard

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

Class 3 Flammable Liquid. Written Statement of Timothy P. Butters Before the Subcommittees on Energy and Oversight Committee on Science, Space and Technology, U.S. House of Representatives at page 12 (Sept. 9, 2014). This is consistent with the sampling and testing Tesoro has completed on Bakken crude oil.

12. Applicant Tesoro Savage Petroleum Terminal LLC, d/b/a Vancouver Energy's (hereinafter, "TSPT" or the "Applicant") would require all terminals shipping crude oil trains to adhere to ANSI/API Recommended Practice 3000 for the Classifying and Loading of Crude Oil into Rail Tank Cars ("API RP 3000"). This recommended practice was developed in 2014 with focused and significant involvement of all parties involved in the crude by rail supply chain, and with the input and support of national regulators from both the United States and Canada.

13. Following API RP 3000 ensures that, based on a written sampling and testing program, all crude oil shipped by rail has the proper classification as a Hazard Class 3 flammable liquid and the proper associated PG assignment (including additional labeling or information as relevant and needed for the shipment), along with a proper rail tank car fill (so as not to have overfills) and that loaded railcars are properly inspected and sealed prior to shipment. TSPT would require all shippers of crude oil trains to comply with API RP 3000 (along with, of course, all relevant regulations). In addition, TSPT would effectively verify all shipping terminals' compliance by sampling and testing inbound crude oil and by checking the inbound condition and loading of rail tank cars.

14. Similar to the requirements of API RP 3000, it is my understanding that for all shippers TSPT would contractually require certain crude oil quality and specifications in order to manage the integrity of the crude oil received at the Project. These requirements would cover the full range of relevant hazard classification, safety, and commercial needs for the crude oil. TSPT would require all terminals shipping crude oil

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

trains to regularly demonstrate their compliance with the crude oil quality and specifications. In addition, TSPT would effectively verify all terminals' compliance by sampling and testing received crude oil.

15. In addition to the classification of the material, the shipper is also responsible for the proper package selection and securement. Based on the classification of the commodity, the regulations specify the approved carriers (the package) for transportation by rail. While the regulations governing transportation of crude oil have been recently changed (as described in further detail below), current standards approve Class 3 PG I or II materials for transportation in several types of general purpose tank cars: DOT-111; DOT-120; and DOT-117. The regulations further specify the tank car classifications which are designated by additional numbers and letters that are added at the end of the title to identify characteristics of the tank car, including tank test pressure, and identification of specific design components. By way of example, the DOT120J200W refers to a DOT120 tank car that is jacketed ("J"), pressure tested to 200 psi ("200"), and a specific type of fusion welding ("W").

16. Once the material is properly classified and the shipper has selected the proper package, the shipper will load the material (or have the material loaded) into the package. The shipper must ensure that the package is properly placarded and labeled to enable first responders and rail operators to quickly know the type of material contained in the tank car and its hazardous characteristics. The shipper is then responsible for ensuring that the package is secured and free from leaks before releasing the package to the railroad. Securement includes ensuring that all valve handles are closed, all manway bolts and plugs are tool tight, and proper gasket and sealing materials have been selected that are compatible with the commodity being transported. Often times the shipper will use a loading checklist to ensure compliance with securement requirements.

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

17. Upon release to the carrier, the carrier takes custody of the rail car and is responsible for the safe movement and delivery of that car to its destination. There are federal regulations governing the carrier's movement of the cars, but, within the bounds of those rules, the carrier has discretion in choosing many aspects of the manner of delivery, including the routes and the schedules, how the material is transported (i.e., the train composition), the locomotive power needed to deliver the cars, the personnel used to transport the train, and the speeds at which the train travels.

18. When transporting its crude feedstocks by rail, Tesoro acts in the capacity of a shipper. The Tesoro commercial team contracts for the purchase of crude oil from suppliers. Tesoro's crude schedulers work with the suppliers to transport the crude oil via pipeline or truck to rail loading terminals. Tesoro's rail operation team schedules train arrivals to pull monthly nominated volumes from rail terminals. The rail operation team tracks the unit train shipments and coordinates with the destination point on arrival schedules. Tesoro leases its tank car fleet from several different suppliers and we contract with BNSF for the transportation of crude oil via unit train between North Dakota and Washington.

III. UNIT TRAIN

19. Freight trains can be described as either manifest/single car move or unit trains. A unit train is a railroad industry term that defines a single train movement of cars carrying the same commodity. These trains vary in length but generally speaking economies of scale are achieved when 100 or more cars are in a unit train. Unit trains are ideal for both the shipper and the carrier because they run between an origin and destination without stopping for switching the train consist or adding locomotives. The locomotive power typically stays with unit trains through loading and unloading and the trains only stop for crew changes, refueling, inspections, and for operational delay.

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

Railroads typically offer shippers discounted freight rates for unit train movements because unit trains turn quickly and run high volumes for the railroad.

20. By contrast, a manifest train refers to a combination of single car moves that is divided and reconfigured many times along the route and typically consists of multiple commodities from multiple shippers. In this type of service, rail cars are transferred between several trains along their route and end up in several switching and classification yards. Manifest movements take much more time to complete than unit train movements. The Vancouver Energy Terminal ("Project") anticipates delivery of crude oil by up to an average of four unit trains per day. The anticipated consist is three locomotives, two buffer cars, and between 100 – 118 tank cars.

IV. TANK CAR STANDARDS

21. As described above, federal rules approve crude oil for shipment in tank cars, the design of which is set by regulations adopted by federal agencies. In my employment with Tesoro, I am required to understand those tank car standards, including any changes to the federal rule governing those standards. This included understanding the regulatory process initiated by the Advance Notice of Proposed Rulemaking through the issuance of the Final Rule on Enhanced Tank Car Standards and Operational Controls for High-Hazard Flammable Trains on May 1, 2015, ("Rule"), Federal Register citation for final rule: 80 Fed. Reg. 26,644 (codified at 49 C.F.R. pts 171-74, 179) (May 8, 2015). Most of my work through this process was performed as Tesoro's appointed representative to the American Fuel and Petrochemical Manufacturers ("AFPM") rail working group. AFPM is an industry group that represents shipper interests in regulatory affairs.

22. To understand the recent regulatory changes in tank car specifications for the transportation of Class 3 hazardous materials, it was important to understand the

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

recent history of general purpose tank cars and the changes that preceded the Rule. Prior to the revisions in the Rule adopted in 2015, all Class 3 materials, regardless of Packing Group could be shipped in a DOT-111A tank car. After several high profile incidents involving ethanol, industry stakeholders collaborated to develop a new tank car design. The result of this collaboration was the CPC-1232 car. It is important to note that the CPC-1232 car was an industry standard that was adopted by carriers, manufacturers, and builders but was not mandated by federal regulations. All DOT-111A cars had a 7/16 inch shell thickness while CPC-1232 cars mandated a ½ inch thick tank shell for unjacketed cars. CPC-1232 cars also mandated that all valves be placed inside a protective housing, where DOT-111A cars allowed for the safety relief valves to be placed on the tanks outside of a protective housing. Finally, CPC-1232 cars increased the gross rail limit for these tank cars from 263,000 pounds to 286,000 pounds.

23. Industry adopted the CPC-1232 standard and petitioned the Department of transportation to adopt the same standard. As of October 11, 2011, the Association of American Railroads ("AAR") mandated that all tank cars newly manufactured for general purpose tank car service had to be built to the CPC-1232 standard in order for the car to be transported by the member carriers of AAR.

24. After the tragic Lac-Mégantic incident in July of 2013, there was a renewed focus on tank car design that resulted in DOT's notice of proposed rulemaking. After a comment period and input from stakeholders, the DOT issued the final Rule on May 1, 2015. The Rule includes: changes to the process for classification of unrefined petroleum products; the identification of High Hazardous Flammable trains ("HHFT"); speed restrictions for HHFTs; enhanced braking requirements for HHFTs, new tank car specifications for transporting Class 3 materials, retrofit criteria for older tank cars

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

transporting Class 3 materials, and a phase-out schedule by which tank cars in service would need to comply with the new regulations.

A. Crude classification standards

25. The new Rule amended classification standards for crude oil in several ways. For example, the new Rule, clarified that frequency of testing must account for "any appreciable variability of the material" (e.g., history, temperature, method of extraction, location of extraction, time of year, and time between shipments). The Rule also clarified the requirement for sampling along the supply chain to require sampling "prior to the initial offering of the material for transportation, and when changes that may affect the properties of the material occur." Sampling must ensure representative sample of entire mixture, as offered, is collected. The rule requires duplicate sampling or "equivalent measures for quality assurance" to allow for other measures.

B. Definition of HHFT and HHFUT; Speed Restrictions

26. In addition, PHMSA modified definition of a "High-hazard flammable train" ("HHFT"). Under the Rule, HHFT means a continuous block of 20 or more tank cars loaded with a Class 3 hazardous material or 35 or more tank cars loaded with a Class 3 hazardous material dispersed through a train. Additionally, PHMSA added definition of a "High-hazard flammable unit train" ("HHFUT") to mean a train comprised of 70 or more loaded tank cars containing Class 3 hazardous materials traveling greater than 30 mph. The Rule imposes speed restrictions on those defined trains, including maximum 50 mph speed restriction for HHFTs in all areas. Additionally, HHFTs containing any tank cars that do not meet the new enhanced tank car standards must operate at 40-mph in High-Threat Urban Areas (which have been previously identified by the U.S. Department of Homeland Security).

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

C. Enhanced Braking

27. According to the Rule, all HHFTs must have two-way end-of-train ("EOT") device or distributed power ("DP") braking system. An EOT is a device placed at the end of train that communicates with the locomotives on the front end to share train continuity and brake pipe pressure information. Distributed power is the term used to describe a train that has locomotives on the front and rear of the train that work in unison to supply power for the movement. Additionally, under the Rule, a HHFUT transporting at least one tank car of Class 3, PG I material must operate with electronically controlled pneumatic ("ECP") braking system by January 1, 2021, while HHFUT transporting at least one tank car of Class 3, PG II or PG III material must operate with ECP braking system by May 1, 2023. Traditional train braking systems are controlled by compressed air that run through a brake pipe system throughout the train. Compressed air allows the brakes to release while releasing the air caused the brakes to activate. ECP brakes are a technology that uses electronic controls to activate air-powered brakes on each of the cars using a cable that runs parallel to the brake pipe down the length of the train. This cable supplies power to the electronic components installed on the cars and allows the locomotive to send a braking command to all the cars at the same time.

D. Tank Car Design Standards

28. The Rule changed the standard design for tank cars to improve the tank car's performance in a derailment event. Tank cars designed pursuant to the new requirements are assigned a new designation: DOT-117. DOT-117s must weigh no more than 286,000 pounds when loaded. The shell must be 9/16-inch thick. It must include an 11-gauge minimum thickness jacket, referring to the additional layer around the shell. Additionally, the tank car must include a full height, ½-inch thick head shield. The Rule also included provisions addressing thermal protection that were ultimately altered by the

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

FAST Act, described below. The tank car must include a modified bottom-outlet-valve ("BOV") handle to address accidental openings in the event of a derailment. The modified BOV handles disengage from the BOV during transportation thus substantially reduced the possibility of accidental opening during a roll over. Additionally, the tank car must include top fittings protection and reclosing pressure relief devices ("PRDs"). The Rule allows for a retrofit of CPC-1232 cars to achieve an improved design. The main difference between the DOT-117 design and the retrofit design (identified as a DOT-117R) is that the retrofit can maintain its existing shell thickness of 7/16 inch or ½ inch. The rule also set forth a schedule for implementing the tank car design requirements that included dates by which the car must be retrofit, retired or placed in a different service. However, that schedule was altered by the FAST Act, discussed below.

29. Tesoro has asked the Union Tank Car Company, a tank car manufacturer, to prepare scale model cross-sections of several different tank car containment vessel types to depict the design differences between various tank cars. I am familiar with the tank cars represented by these models. They accurately represent the design, construction, and materials used in the tank cars. In particular, the cross-sections highlight the differences in the tank car shell thickness, the presence of (and thickness) of thermal blankets, and the presence (and thickness) of the jacketing. Photographs of each of the cross-section models are attached hereto as Attachment A. The following models are shown in the photograph, from left to right: DOT-111A "Legacy" (7/16" tank shell); DOT-111A and CPC-1232 (½" tank shell); DOT-117A (9/16" tank shell; 1/2" thermal blanket, 11 gauge jacket); DOT-120J: (9/16" tank shell; ½" thermal blanket; 3 1/2" thermal insulation; 11-gauge jacket). I certify that these are true and correct depictions of the cross-section models of the various tank car classifications as identified in the attachment, which Tesoro ordered to be built to the corresponding specification.

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

E. FAST Act Modifications to the Rule

30. The Rule was further modified by the Fixing Americas Surface Transportation ("FAST") Act, H.R. 22, 114th Cong., Pub. L. No. 114-94, which was signed into law on December 4, 2015. Specifically, the FAST Act changed the Rule requirements for thermal protection by mandating DOT-117 and non-jacketed DOT-117R tank cars to have a thermal blanket at least ½ inch thick that is sufficient protect the car against a 100 minute pool fire and a 30 minute torch fire.

31. The FAST Act also addressed the requirement in the rule to incorporate ECP brakes. The Act requires the completion of two studies on ECP brakes, by the Comptroller General and by the DOT with the National Academy of Sciences due to be completed by June 4, 2017. (Section 7311(a)-(b)). By December 4, 2017, PHMSA must make a determination as to whether the ECP brake requirement is justified. If PHMSA does not conclude that the ECP brakes re justified, the requirement will be repealed. However, while these studies are on-going the ECP brake mandate is not suspended.

32. The FAST Act adopted a modified schedule for the phase-out of tank cars that are not compliant with the DOT-117 specifications. The schedule for phasing out these tanks cars is now tied to the commodity and Packing Group of the material shipped, as follows:

	Fast Act Phase-Out schedule by Car Type			
	Legacy DOT-111		CPC-1232	
Commodity	Non-jacketed	Jacketed	Non-jacketed	Jacketed
Unrefined Petroleum Products including crude oil	1/1/2018	3/1/2018	4/1/2020	5/1/2025
Other Class 3 Flammable Liquids / Packing Group 1	5/1/2025	5/1/2025	5/1/2025	5/1/2025
Ethanol	5/1/2023	5/1/2023	5/1/2025	5/1/2025
Other Class 3 Flammable Liquids / Packing Group 2	5/1/2029	5/1/2029	5/1/2029	5/1/2029
Packing Group 3	5/1/2029			

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

33. While the Rule as modified by the FAST Act allows for continued use of legacy DOT-111 and CPC-1232 tank cars under certain circumstances, TSPT will only accept tank cars for crude oil shipment into the Facility that meet or exceed the U.S. DOT-117 standards specified in 49 C.F.R. 179.202 (including any related federal agency or congressional modifications to those standards). All Facility customers will be required to ship crude oil using tank cars that meet or exceed these standards. TSPT is committed to making this requirement for all customers concurrent with startup of the Facility and in advance of the phase-out schedule allowed by the U.S. DOT.

V. TANK CAR WEIGHTS

34. I am aware that several commenters have raised concerns regarding the weight of tank cars; however, laden tank cars do not weigh more than any other laden freight car. In general, railroads determine the gross rail limit for rail cars traveling on the lines. This determination is based on factors such as track class and load bearing capabilities of bridges along the route. The gross rail car limit for the majority of Class 1 mainline rail traffic is 286,000 pounds. This number is reached through a combination of the empty weight of the railcar plus the weight of the commodity transported. The weight limit on the rail lines is not influenced by the commodity transported. That is to say the gross rail limit for a car carrying grain is the same as the gross rail limit for a rail car carrying crude oil. In order to maximize capacity, freights cars are typically designed to carry the most freight. Recent regulatory changes in tank car design have resulted in heavier cars because of the additional tank shell thickness and jackets. This heavier tare weight reduces the capacity of the tank cars as they must still adhere to the 286,000 pound gross rail car limit.

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

VI. TRAIN OPERATIONS AND DISPATCHES

35. In general, CTC governs mainline rail movements throughout much of the network. CTC is a centralized signaling system. Where in place, train signals govern train movements, with specific signals directing trains to proceed, stop, or be prepared to stop. Control points are manually controlled by dispatcher and intermediate points that are automated and signals are determined based upon train traffic ahead. If the rail is occupied ahead with other traffic, the intermediate points direct other trains to stop until it is clear to proceed. A break in the rail on a particular segment (for example, due to extremely cold weather or a seismic event) interrupts the bonding system that connects that signal to the system. At that time, the signal leading into that rail segment will display a red, or "stop" signal, thus directing any trains to refrain from entering that segment.

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

Attachment A: Photographs of Cross-sections

[*Signature on following page*]

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

DATED this 13 day of May, 2016.

John Hack, Declarant

STATE OF Texas)
)
COUNTY OF Bexar)

John Hack, 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 13th day of May, 2016.

NOTARY PUBLIC in and for the State of: Texas

SONIA SMITH
Notary Public, State of Texas
Comm. Expires 01-13-2020
Notary ID 12297631

Residing at: 15423 Spring Coral

My Commission Expires: 1/13/20

Printed Name of Notary: Sonia K. Smith

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