February 5, 2015

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Energy Facility Site Evaluation Council

Utilities & Transportation Commission

P.O. Box 43172

Olympia, Washington 98504-3172

Re: Tesoro SavageVancouver Energy Distribution Terminal

Application No. 2013-01 | Docket No. EF131590

Request for Additional Information to Assess EIS Alternatives

Dear Stephen and Sonia:

You have asked the Applicant to provide additional clarification regarding the project objectives and additional information regarding the distribution terminal facility (Facility) design to assist the Energy Facility Site Evaluation Council (EFSEC) and its Environmental Impact Statement (EIS) consultant team in its evaluation of possible alternatives for the DEIS. This letter responds to those questions. If, after your review of these responses, you or your EIS team requires additional information or clarification, we encourage EFSEC to schedule a peer-to-peer discussion with EIS consultants, EFSEC EIS staff, and Vancouver Energy employees to provide you with any further information or clarification.

We note by way of introduction that many aspects of the facility's design are based on the characteristics of crude oil, market forces and demands, and the Applicant's and its owners' extensive experience in operating crude oil terminals. With this letter, we are providing an explanation of key principles and considerations in a manner that hopefully gives you an adequate level of information upon which to make your SEPA judgments.

Project Objectives (purpose and need):

The project objectives were described at Section 2.22 of the Application for Site Certification (ASC) and Section 1.2.3 of the Applicant-prepared Preliminary Draft Environmental Impact Statement (PDEIS). In summary, the project's objective is to serve the market demand for mid-continent North American crude at the Petroleum Administration Defense District (PADD) 5 refineries, in particular those along the West Coast (as described in PDEIS Section 1.3). This project objective encompasses both a market demand component (the PADD 5 refinery demand) and a market supply component (the mid-continent North American crude source). Based on production projections for the various mid-continent North American sources, the Bakken is expected to continue being one of the primary mid-continent sources[1]. As explained in PDEIS Sections 1.2.5.2 and 1.3.7.2, there are no oil pipeline routes from the Bakken to PADD 5; and, therefore, transportation by rail is the only feasible option for transporting this crude to the PADD 5 refineries. The project objectives clearly stated that "Implementation of Facility elements that accommodate the flexibility to serve multiple clients through the appropriate capacity for receipt, segregation and loading of the crude oil" was a necessary development criteria (*see* PDEIS Section 1.2.3.1).

California and Alaska crude production delivered to PADD 5 is declining. *See* PDEIS Figure 1.3.7. This decline in production has been replaced by foreign imports (via marine vessel) to meet the PADD 5 demand. *See also* PDEIS Figure 1.3.7. The foreign import portion of the PADD 5 demand accounts for 1 million to 1.2 million barrels per day. (*See* PDEIS, Table 1.3-10, taking those annual totals, multiply by 1,000 and divide by 365 days to convert the annual totals shown in that table to the

[1] U. S. Energy Information Administration, January 2015 Drilling Productivity Report for the Tight Oil and Shale Gas regions. http://www.eia.gov/petroleum/drilling/pdf/dpr-full.pdf

daily average stated here). Therefore, at a proposed average daily throughput of 360,000 barrels per day, the project does not satisfy the full demand for PADD 5 refineries to replace foreign sources, but satisfies approximately 1/3 of that current demand. The California and Alaska supplies are projected to continue to decline[2]; and thus, the PADD 5 market demand for alternative sources of crude, including alternative mid-continent North American sources, is expected to continue to increase. Accordingly, as described in more detail below, market demand would not limit the facility to the proposed 360,000 barrels per day throughput capacity. That throughput capacity limit is a function of the terminal site's physical and rail access constraints.

To accomplish the project's objective, an EIS alternative should consider how this PADD 5 demand for mid-continent North American crude can be addressed either through the proposed Facility or through other facilities in Washington State. The Applicant described some of these alternative scenarios in Chapter 6 of the PDEIS.

You also asked us to comment on what the Port of Vancouver's purpose and objectives are for this project and why or how the Port arrived at the project scale defined in its request for proposals. PDEIS Section 1.2.2 provides a brief statement of the Port's objectives. However, if EFSEC staff and its EIS team need additional detail or have additional questions about the Port's objectives for the project, the Applicant believes that information is best obtained in a direct conversation with (or request to) the Port. While we would be happy to participate in or facilitate that discussion, we assume that EFSEC would prefer to make that request directly to the Port.

Factors that Led the Applicant to Choose the Port of Vancouver Location

As mentioned above, the Applicant anticipates that the primary source of crude oil that the Facility's customers will deliver to the Facility will be the Bakken. Crude may also come from other North American formations, such as the Niobrara and Uinta, depending on market conditions and the needs of the Facility's customers. We note again that the Applicant will not source or own any crude oil. Rather, the Applicant will receive its customers' crude oil by rail, unload and stage that crude oil in the on-site tanks, and load the crude oil onto vessels provided by those customers. However, it is really not possible to project future market conditions that might favor a different source with any degree of certainty. Based on the strength of Bakken production (*see* EIA productivity report) and market conditions known at this time, assuming Bakken as the primary source seemed and still seems to the Applicant to be the most reasonable and appropriate assumption regarding the likely source of the mid-continent North American crude.

Existing marine port infrastructure on the Washington coast and water ways leading to the coast are geographically the closest outlets for Bakken crude to PADD 5 refineries. BNSF owns or controls the rail infrastructure in the Bakken region. BNSF is, therefore, the likely rail transporter out of the Bakken. Because rail transport agreements and rates tend to favor a single carrier wherever possible, BNSF is also the likely carrier all the way from the Bakken to any marine terminal facility on the Washington coast. Therefore, both because of physical geography (Washington's closest proximity to the Bakken) and because of the ownership of existing rail infrastructure, the BNSF lines and the Port of Vancouver terminal site offer the shortest distance between the Bakken crude source and a deep water marine terminal site that can receive the crude oil directly by rail and load it onto marine vessels for transport to the PADD 5 refineries. Chapter 5 of the PDEIS analyzed at length the most likely route loaded unit trains would be expected to travel through Washington State. Other potential terminal locations elsewhere along the Washington coast, for the same reasons, are likely to receive unit trains using the same BNSF route, but such trains will travel a longer distance past the Port of Vancouver Facility location to reach other terminal facility destinations or the PADD 5 refineries in Washington directly. As described in PDEIS Section 1.2.3.1, the Port of Vancouver Facility location provided the best opportunity in Washington, and along the entire North American West Coast, for a crude-by-rail marine terminal to address the PADD 5 market demand described above. These criteria include:

- A site that can be constructed and placed into operation within a time frame that allows expeditious West Coast refinery access to mid-continent crude oil;
- A location that is centrally located with respect to shipping the oil to West Coast refineries;
- A location that already has the necessary transportation infrastructure to accommodate receipt by rail (unit train) and shipment by marine vessel;
- A site with deep draft access to accept the range of Jones Act vessels;
- A location that is already zoned and developed for industrial use; and
- A site that can be designed to provide flexibility to serve multiple clients through the appropriate capacity for receipt, segregation and loading of the crude oil.

[2] U. S. Energy Information Administration, U. S. Crude Oil and Natural Gas Proved Reserves, 2013, December 2014, http//www.eia.gov/naturalgas/crudeoilreserves/pdf/usreserves.pdf.

Receipt and Storage Capacity (Why 6 tanks are required? and Whether a reduced number of tanks could accomplish the project objectives?)

The Applicant notes, at the outset, that reducing the number of storage tanks does not necessarily reduce the requirements for spill containment, since those requirements are based upon the largest single tank volume (not the total aggregate tank volume) plus a factor of safety. *See* PDEIS Section 2.2.9. It was not clear as posed whether this question relates to spill containment requirements or some other probable significant impact issue or mitigation required.

A number of factors contribute to the determination of what storage volume and how many tanks of what size are required:

1) For example, the storage capacity at the terminal must be sized to accommodate periodic surges in capacity needs due to unplanned fluctuations in the timing of rail deliveries and marine vessel loading. In a typical year, for example (based on information from Columbia River Bar pilots), the Columbia River entrance may shut down approximately 6-10 days over the course of the winter due to severe weather. Because these closures will impact marine vessel arrival and loading, but do not necessarily impact rail traffic to the terminal, the storage must be sized to accommodate these unexpected (yet temporary) surges in storage needs.
2) As explained in PDEIS Section 5.2, ocean-going Jones Act crude oil vessels that are able to navigate the Columbia River are currently primarily sized for the 300,000 to 360,000 barrel range (comparable to the project designed throughput).
3) The need to segregate different types of crude and customer requirements to segregate crudes by ownership also drives the number of tanks and the amount of storage potential beyond total throughput volume. For example, Tesoro will be an anchor customer for this Facility. Two of the 6 tanks will be dedicated to Tesoro's use, leaving 4 tanks for other customer storage needs. Other customer factors that might dictate segregation of the crude into separate tanks include:
    a. Different refineries accept different grades of crude;
    b. Refiners must know the specific characteristics of the crude they will be receiving ahead of time, to make sure the refinery can appropriately handle and process the crude received;
    c. Customers want to retain control of their crude oil quality from its source to delivery, to avoid any unintended or unexpected blending that might change the quality (and value) of the crude they have or are purchasing; and
    d. Even a single customer (such as Tesoro) may well source crude for different refineries and thus, require segregation into separate tanks.

It is expected that the Facility will have as many as 10 customers. The more customers, the greater the amount of storage required to keep the product segregated for the reasons described above. The 6 tanks proposed were determined to be the appropriate number to accommodate these customers' needs within the size constraints of the site. Because individual customer contracts have not (and cannot) be entered into at this time, it is not possible to provide any more specifics regarding individual customer contract requirements.

Throughput Capacity (Why the proposal is for an average daily throughput of 360,000 barrels per day? and What would be the consequence if the project were scaled to accept a smaller daily volume?)

As noted above in the project objective response, inland crude could replace up to the current 1 million to 1.2 million barrels per day of foreign source waterborne crude. The Facility as proposed only meets a portion of this need (approximately 1/3 of the foreign waterborne imports to PADD 5 refineries). Thus, even larger volumes would be required to meet this PADD 5 demand. The proposed Facility throughput was actually limited by the physical terminal site and rail infrastructure constraints, not by limitation in PADD 5 demand. The project phasing proposed in the ASC was originally proposed to allow operations to start as soon as possible, not as a suggestion that the Facility would operate at a reduced capacity long term. When the Applicant originally began development of the project, phasing was also proposed to allow the Applicant time to gauge the market, commence operations as soon as possible, and allow time to negotiate additional customer contracts. With all of the time that has passed since that original August 29, 2013 ASC, all indications continue to show that the demand is present and sustainable to support the proposed 360,000 bpd throughput (the site limiting factor); and the Applicant expects to begin construction of Phase 2 as soon as Phase 1 is in operation.

The proposed throughput does not drive the Facility rail infrastructure, but rather it is the other way around. The Port's rail infrastructure is driving what is available within the Terminal 5 area. The Port's West Vancouver Freight Access project (WVFA) is permitted for 5 loop tracks in the Terminal 5 area. The WVFA project added grade separation between the North/South mainline rail and the entrance into the Port. In the Terminal 5 area, a grade separated overpass was added to

change the traffic flow within the port and keep trucks and rail cars moving unimpeded. Vancouver Energy will permit and build one additional loop track outside of the 5 permitted (for a total of 6 loops at the Terminal) on WVFA. The loop track is an

efficiency for rail and terminal operations because an entire train (unit train) can be staged and unloaded without being broken up and stacked on parallel tracks (e.g., the ladder tracks at other facilities) and without impeding rail access to other Port users, or without impeding mainline rail traffic. Because the Terminal 5 area does not have the property available to add any additional rail loops sized for unit train operations beyond those described in this paragraph, the facility cannot receive more than the stated average of 4 trains per day, without creating impact to other existing and future Port rail operations and the BNSF mainline traffic. The 360,000 bpd throughput (4 trains) is based on tank car capacity and the number of tank cars in a unit train, using high-end assumptions regarding volumes per train so that potential impacts related to these volumes are not underestimated in the environmental documents.

For the vessel berth, the size and types of vessels used to transport the crude dictate the dock improvements, not the number of vessels that will be loaded on a weekly basis. A smaller volume Facility would not change the requirements to modify the dock or the scale or nature of those modifications.

Given the somewhat standard ocean-going Jones Act vessels used to transport crude oil, the storage requirements and the transfer pipelines must be sized to allow efficient vessel loading when the vessel arrives to avoid "demurrage"—additional charges for a vessel lease for overtime use. Thus, the transfer pipelines must be sized to efficiently load a 300,000 to 360,000 barrel vessel when it arrives, regardless of how many arrive in any given period of time. Transfer pipe size does not change with fewer vessels that might be associated with smaller daily volumes. *See* PDEIS Section 5.2.

Because the rail infrastructure investment; the dock improvement investment; the size and configuration of the transfer pipeline; the number and size of tanks required to segregate product; and the anticipated unexpected surges in storage needs (due to river closure or rail traffic backups) would not change with reduced throughput volume at this facility, the initial investment costs for the facility would not be expected to vary significantly, if at all, with a reduced volume throughput.

Additionally, if the proposed Facility throughput were reduced, project objectives and PADD 5 demand would then need to be satisfied with other, smaller scale facilities at other terminal locations or with direct delivery by rail to the refineries. A greater number of smaller facilities could introduce a greater number of transfer points, and the potential for an associated greater number of failure points (or at least opportunity for failure points) since the point of transfer is often the point at which elevated risk of a release could occur.

Why are Other Crude-by-Rail Marine Terminal Proposals in the State of Washington Proposing Smaller Scale Projects?

Because the Applicant is not involved in any of the other proposed terminal facilities under review in the State of Washington, the Applicant is not in a position to comment with any specific detail on what might be the reasons why those other facilities are proposed at a smaller throughput volume. However, based on information that is generally publicly available through the existing public SEPA information[3], the Applicant believes that the following factors might contribute to the size of the facilities proposed:

- The terminal proposals at the Port of Grays Harbor, for example, do not appear to have loop rail access, and the maneuvering required to cut the train and stack the cars on ladder tracks for unloading may be a factor that limits daily throughput size. The Grays Harbor sites are also served by a short-line railroad and not exclusively by the BNSF Class I rail line. Short line operational requirements or constraints may contribute to lower proposed throughput volumes for those projects;
- The Westway and Imperium sites have other existing operations (methanol and biofuels processing, respectively) that may limit throughput volumes that those sites can accommodate;
- The NuStar site at the Port of Vancouver is simply a repurposing part of an existing facility; and
- The Applicant did note, based on public SEPA information (referenced in the PDEIS at Table 7.1-1), that the ratio of storage capacity to daily throughput proposed in the Grays Harbor facilities exceeds that same ratio proposed by the Applicant at the Port of Vancouver Facility. This is presumably for reasons similar to the reasons described above—to accommodate anticipated customer requirements for product segregation.

[3] Shoemaker, R.K. 2014, Westway Terminal expansion joint aquatic resources permit application (JARPA) form. February 13, 2014. Available at http://www.ecy.wa.gov/geographic/graysharbor/20140211-Westway-JARPAapp.pdf, accessed August 22, 2014. Plaza, J. 2013. Imperium Terminal Services, LLC. Imperium bulk liquid terminal facility project proposal environmental checklist resubmittal. February 22, 2013. Available at http://www.ecy.wa.gov/geographic/graysharbor/20130222-Imperium-SEPAchecklist.pdf, accessed August 22, 2014.

The Applicant cannot otherwise comment on what may be economic or other business reasons why those other facilities are proposed with smaller throughput. However, the Applicant does believe for that reason, it is not possible to assume that the fact that those facilities are smaller is any indication of whether a smaller throughput at the proposed Vancouver Energy Facility would be feasible, nor whether a smaller throughput at the proposed Vancouver Energy Facility would have less probable significant adverse impacts.

Will Blending of Crude Oil Types or Grades Occur? and What Impact does this have on the Number or Size of Tanks?

Some minor blending will occur out of necessity, given that on average approximately 4 unit trains will be required to load 1 vessel, and some minor variation in crude qualities among those trains is almost inevitable. In addition, some amount of blending may occur among customers within similar crude grades if permitted by customer specifications to be stored in the same tank. However, as described above in the section on size and number of tanks, customers who use the Facility will likely be interested in ensuring that the quality of the crude oil they sourced remains unaltered because they are managing that crude to feed their specific refinery systems. These customers may, therefore, specify independent storage of their specific crudes at the Facility. These requirements drive the number and size of tanks, as described above.

Why are Heated Tanks and Heated Transport Pipelines within the Site Proposed, and Could those 2 Tanks be Eliminated if the Facility did not receive the Lower API (i.e., "heavier") Crude Oils?

As described in Section 2.10.1.2 of the ASC, the Facility is being designed to accept what is known as "pipeline quality" crude oils, with a range of API from approximately 15 to 45, all of which fall within the range that will flow in a pipeline. The project is not being designed to receive or handle bitumens or other ultra-heavy crudes in their natural state. Heated tanks (and the heated transfer pipelines) are proposed to accommodate the lower API grades within this range, or higher viscosity crudes (due to characteristics such as high wax content present in the Uinta Basin), which depending on ambient conditions, may require heating to flow at appropriate vessel loading rates, particularly if the transfer pipeline is shut down for any reason with lower grade crudes in the pipeline. Because the sources of crude will vary from customer to customer and from source to source, it is not feasible to eliminate the tanks or heated transfer pipeline components of the project as part of any reduced volume throughput.

Hopefully, we have accurately captured and responded to the questions you have raised to assist EFSEC and its EIS team in the evaluation of DEIS alternatives and project objectives. Again, if you or your team require any additional explanation of the items described in this letter, please do not hesitate to contact the Applicant for any additional clarification.

Sincerely,

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Cc: Ann Essko