

**U.S. DEPARTMENT OF TRANSPORTATION**  
**PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION**  
**Special Permit Analysis and Findings**

**Special Permit Information:**

<b>Docket Number:</b>	PHMSA-2017-0091
<b>Requested By:</b>	Hilcorp Alaska, LLC
<b>Operator ID#:</b>	32645
<b>Original Date Requested:</b>	March 24, 2017
<b>Issuance Date:</b>	April 29, 2019
<b>Effective Dates:</b>	April 29, 2019 to April 29, 2029
<b>Code Section(s):</b>	49 CFR 195.563 and 195.573

**Purpose:**

The Pipeline and Hazardous Materials Safety Administration (PHMSA) provides this information to describe the facts of the subject special permit application submitted by Hilcorp Alaska, LLC (Hilcorp),<sup>1</sup> owner and operator of the proposed Liberty Sales Oil Pipeline (Liberty Pipeline), to discuss any relevant public comments received with respect to the application, to present the engineering/safety analysis of the special permit application, and to make findings regarding whether the requested special permit should be granted and if so under what conditions. Hilcorp requested that PHMSA waive compliance from 49 Code of Federal Regulations (CFR) 195.563 and 195.573 for approximately 5.68 miles of 12.75-inch hazardous liquid pipeline installed within a 16-inch diameter casing pipe.

**Pipeline System Affected:**

The special permit request applies to the Liberty Pipeline and asks for a waiver of the cathodic protection (CP) requirements in 49 CFR 195.563 and 195.573 for approximately 5.68 miles of 12.75-inch diameter pipeline. The Liberty Pipeline will transport crude oil. The Liberty Pipeline

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<sup>1</sup> Hilcorp Alaska, LLC is a wholly-owned, operating subsidiary of Hilcorp. The Liberty Project partners include Hilcorp Alaska, LLC, BP Exploration (Alaska) Inc., and ASRC Exploration, LLC.

starts at the Liberty Drilling and Production Island (LPDI), an artificial island, and travels across Foggy Island Bay of the Beaufort Sea, United States Outer Continental Shelf (OCS), to the northern Alaskan coast line located west of the Kadleroshilik River Delta. The Liberty Pipeline route and location can be reviewed in the special permit conditions.

The Liberty Pipeline *special permit segment* includes the approximately 5.68 miles of 12.75-inch diameter carrier pipeline installed within a 16-inch diameter casing pipeline, the 16-inch diameter casing pipeline, the annular space between the two (2) pipelines, the two (2) casing to carrier pipe “bulkhead” connections located on each end of the pipe-in-pipe (PIP) segment, and the connecting 12.75-inch diameter carrier pipeline from the 16-inch casing pipe to the in-line inspection (ILI) tool launcher and receiver from approximate Milepost (MP) 0.02 and MP 7.25.<sup>2</sup> The special permit conditions require installation and operation of an in-line inspection ILI tool calibration spool, remote operated mainline valves located at Milepost (MP) 0.02 and MP 7.25, and ILI launchers and receivers. At the shore, the pipeline will transition to a single-wall, aboveground pipeline supported on vertical support members (VSMs) and continue south to tie into the existing Badami Pipeline. Product (crude oil) will be transported from the Liberty Pipeline through the Badami and Endicott Pipelines to the Trans Alaska Pipeline System (TAPS).

### **Special Permit Request:**

Hilcorp applied to PHMSA on March 24, 2017, for a special permit seeking relief from the Federal Pipeline Safety Regulations in 49 CFR 195.563 and 195.573 for the Liberty Pipeline. Hilcorp’s request for a special permit is for the Liberty Pipeline, specifically, the submerged PIP segments, and proposes waiving compliance from the following corrosion control sections of the Federal Pipeline Safety Regulations:

- 1) 49 CFR 195.563, Which pipelines must have cathodic protection?
- 2) 49 CFR 195.573, What must I do to monitor external corrosion control?

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<sup>2</sup> The “Liberty Pipeline” refers to the entire approximately 7.25 miles of pipeline and supporting facilities that are jurisdictional to 49 CFR Part 195.

These Federal Pipeline Safety Regulations require hazardous liquid pipeline operators to have CP to prevent external corrosion and to monitor the level of external corrosion control to ensure adequate protection from pipeline metal loss. While the PIP<sup>3</sup> design is intended to prevent the creation of a corrosive environment, if there is a failure of either one of the pipes, a corrosive environment will occur and compliance with these federal corrosion regulations would not be possible. Furthermore, the PIP design and operating temperature differentials introduce atypical loads and strains to the pipeline, and presents pipeline condition assessment challenges that must be addressed to stay in full compliance. The purpose of the Liberty Pipeline special permit is to assure safety and environmental protection in lieu of compliance with these Federal Pipeline Safety Regulations.

The special permit conditions are necessary to ensure the design, construction, operation and maintenance (O&M) activities of the Liberty Pipeline are consistent with pipeline safety, specifically 49 CFR Part 195. The Liberty Pipeline will consist of 12.75-inch diameter pipeline surrounded by an outer 16-inch diameter casing pipe. This PIP design creates a dry annulus that protects the carrier 12.75-inch diameter pipeline from exposure to electrolytes, such as sea water, saturated thermal insulation, or saturated soils. The special permit conditions apply to the design, construction, and O&M of this PIP system.

Specifically, the special permit conditions address the possible introduction of an electrolyte around the carrier pipe, which could create an environment allowing corrosion to occur. Further, the special permit conditions provide a means for assessing the condition of the carrier pipe to ensure its integrity is maintained if the PIP system is compromised. Finally, the special permit conditions are necessary to allow Hilcorp to safely operate the special permit segment at a maximum operating pressure (MOP) of 1,480 pounds per square inch gauge (psig) and a maximum operating temperature of 150 degrees Fahrenheit (°F).

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<sup>3</sup> The PIP reference means the 12.75-inch diameter carrier pipe installed within the annulus of the 16-inch diameter casing pipe in the *special permit segment*.

The special permit allows Hilcorp to operate the Liberty Pipeline *special permit segment* without CP, but Hilcorp must operate the *special permit segment* in accordance with the additional safety requirements required in the special permit conditions.

**Public Notice:**

On October 15, 2018, PHMSA published the special permit request in the Federal Register (83 FR 52050) and the public comment period ended on November 14, 2018, with all comments received being reviewed and considered. The special permit application from Hilcorp, pipeline route maps, public comments, environmental assessment, and special permit conditions are available in Docket No. PHMSA-2017-0091 at: [www.regulations.gov](http://www.regulations.gov).

PHMSA received comments from four (4) stakeholders on the proposed Liberty Pipeline special permit. The comments received were for denial of the special permit request. A summary of stakeholder posted comments are:

- Stakeholder Comments Requesting PHMSA to Deny the Special Permit: 4
  - Private Citizens – 2
  - The Wilderness Society (TWS) – 1
  - Center for Biological Diversity - 1
- Stakeholder Comments in support of Special Permit: 0

**PHMSA Overall Response and Considerations of Public Safety Concerns:**

PHMSA has reviewed the public stakeholder comments on the docket, e-mails sent to PHMSA, and phone calls received through November 14, 2018, concerning the Liberty Pipeline. For the *special permit segment*, usage of the enhanced design, material, construction, operations and maintenance specifications, and procedures as outlined in the special permit conditions will maintain equivalent safety as compared to maintaining CP and installing no casing pipe through this *special permit segment*.

The public comments are summarized as noted below and in the referenced Final Environmental Assessment and Finding of No Significant Impact and the special permit conditions that must be implemented can be reviewed on the docket (PHMSA-2017-0091) at [www.regulations.gov](http://www.regulations.gov).

PHMSA's summarization of the public stakeholder comments and how the concerns are being handled within the special permit are below:

- 1) **Stakeholder Comment:** CP requirements prevent both internal as well as external corrosion. Note that Hilcorp's application only focuses on external corrosion. TWS believes that the CP system is needed to prevent internal corrosion on this pipeline which will be carrying warm – up to 150 °F – crude oil. While it is true that the outer pipeline may prevent oil from entering the offshore environment if there is a release from the inner pipeline, there still will be adverse construction and remediation-related impacts resulting from that release.

- **PHMSA Response:** Buried pipelines utilize CP, either using an impressed current or a galvanic anode system, to protect the pipeline against external corrosion. Internal corrosion most commonly occurs due to corrosive mixtures of water and certain gases like carbon dioxide (CO<sup>2</sup>) or hydrogen sulfide (H<sup>2</sup>S) in the transported fluid. Microbial influenced or induced corrosion can also result in accelerated deterioration of the pipe initiated by different microbial activities present in oil and gas systems. PHMSA's regulations, specifically 49 CFR 195.579, require operators to investigate and determine whether the fluid stream in the carrier pipe is corrosive, and take adequate steps to mitigate internal corrosion including the introduction of corrosion inhibitors, eliminating the corrosive fluid stream, and to monitor the effectiveness of the inhibitors via coupons (pieces of steel pipe that are inserted into the pipeline and routinely measured for metal loss). The ILI devices mandated in the special permit conditions for the Liberty Pipeline will allow for the routine identification and measurement of any internal corrosion to confirm the internal corrosion methods being used by Hilcorp are effective. While there should not be a corrosive environment in the Liberty Pipeline PIP annulus since Hilcorp is being mandated to keep it continuously dry, if water or other corrosive fluids were to enter the annulus, the casing could experience internal corrosion. For that reason, we are revising the proposed special permit conditions to require Hilcorp to coat the inside of the casing pipe with a corrosion resistant material. The 12.75-inch diameter carrier pipe is already required to have an external coating. These steps

should minimize any release either from the carrier pipe or the secondary containment provided by the casing pipe. (See Special Permit Condition 10(d) for requirements for coating the internal and external surfaces of the 16-inch diameter casing pipe.)

- 2) **Stakeholder Comment:** In order to create an inert environment between the two pipes, Hilcorp proposes to seal the ends of the inner and outer pipelines. Because this approach will create additional pipeline stresses and is contrary to the design used in two similar Alaska projects, Oooguruk and Nikaitchuk pipelines, TWS questions why Hilcorp has chosen to use this problematic design. Also, as noted in the Draft Environmental Assessment (EA) developed for this special permit:

- “the [PIP] design would require more time to complete a repair than a single walled pipe. This longer repair duration for the proposed action as compared to the no-action could result in slightly greater impacts to the wildlife, in the event that a repair is needed. This difference would increase the duration of noise, sedimentation in the water column, and direct disturbance to organisms living on the sea floor such as polychaetes, bryozoans, crustaceans and mollusks and sea life higher in the food chain that depend on those organisms.”

- **PHMSA Response:** The Liberty pipeline design appears to be using a similar design as the Oooguruk and Nikaitchuk pipelines. PHMSA does not regulate the crude oil carrier pipe or casing for either of these pipeline systems. PHMSA recognizes that a PIP design has certain merits, particularly if the carrier pipe fails and the casing can contain the oil so it does not enter the sensitive Beaufort Sea. Additionally, the carrier pipe and casing pipe are expected to expand at different rates causing potentially large loads on the pipes and PIP seals (bulkheads) at the ends of the PIP section. The special permit conditions require monitoring of any excessive deformation that could threaten the integrity of the carrier pipe or casing pipe. We concur that if a repair was needed that it may take longer to construct a safe working environment and minimize environmental damage. For that reason, in response to public comment, PHMSA has modified the proposed special permit conditions to require identification of integrity threats at lower

corrosion and deformation levels in order to schedule the repairs and prevent a potential failure. (See Special Permit Condition 24(h) for anomaly repair safety factors that will require repairs a schedules that will be faster than the schedules in 49 CFR Part 195).

3) **Stakeholder Comment**: The draft EA developed for this special permit has several deficiencies that must be addressed in the Final EA.

- First and most importantly, the No Action alternative utilized for comparison is not appropriate as it assumes a single-wall pipeline in compliance with PHMSA's CP regulations and not a PIP design in compliance with the regulations. As a result, the Draft EA must be redone comparing the special permit to a PIP design with CP, and that redone Draft EA should be made available for public comment.
- Notably, the two most recent offshore Arctic pipelines constructed were both PIP configurations as those designs represent best practices.
- **PHMSA Response**: PHMSA does not regulate the two cited PIP crude oil lines (Ooguruk and Nikaitchuq) in the Beaufort Sea. The Liberty Pipeline offshore design approach will be the fourth subsea pipeline installed in the Alaskan Beaufort Sea (Northstar, Oooguruk, and Nikaitchuq). The Liberty Pipeline will be the 3<sup>rd</sup> pipeline in the Beaufort Sea that utilizes a PIP design for the crude oil carrier pipe, however the other two (Oooguruk and Nikaitchuq) are not regulated since they are carrying non processed crude oil and were deemed to be a production flowline outside of PHMSA's jurisdiction. Northstar is regulated by PHMSA since the crude oil is processed prior to transportation and uses a conventional single wall pipe design compliant with existing Federal Pipeline Safety Regulations. PHMSA regulates the safety of crude oil pipelines through 49 CFR Part 195. PHMSA did not consider a PIP alternative to have adequate CP since CP cannot be provided nor monitored for the sealed inner carrier pipe. PHMSA special permit conditions will mandate more extensive protection through monitoring and maintenance of the annulus and more frequent assessments than the existing Federal Pipeline Safety Regulations to ensure that corrosion is not occurring. PHMSA does want to encourage PIP design in limited

instances, e.g. where the environment is very sensitive, but PHMSA wants to ensure that no unintended safety consequences are introduced and that the pipeline stays in compliance with existing safety regulations. (See Special Permit Condition 24(b) through (d) for ILI integrity assessment criteria, which requires short assessment intervals than 49 CFR 195.452.)

- 4) **Stakeholder Comment:** The draft EA fails to specify the threatened and endangered species present in the area, though it does reference the Bureau of Ocean Energy Management's (BOEM) full Environmental Impact Statement. Notably, there are many such species present in that area including several species of birds: spectacled eiders and Steller's eiders (pages 3-36); and of marine mammals: bowhead, fin, humpback, and right whales; bearded seals, Steller sea lions, sea otters, and polar bears (pages 3-49). Specifying these species allows for improved public comments and awareness of the potential impacts of the project, and should be included in the Final EA.

- **PHMSA Response:** The commenter is correct that various protected species utilize and inhabit the area of the Liberty Pipeline. The lead agency BOEM has authority to approve siting and construction of the proposed Liberty Development Project, including the proposed Liberty Pipeline. PHMSA has no authority over pipeline siting, and the "no action" alternative that PHMSA is required to consider is a pipeline that fully complies with the minimum standards in 49 CFR Part 195.

BOEM initiated formal consultation under the Endangered Species Act with the National Marine Fisheries Service (NMFS) (NMFS Consultation Number: AKR-2018-9747). In July 2018, NMFS issued a Biological Opinion for the Project, which includes an Incidental Take Statement along with Reasonable and Prudent Measures, Terms and Conditions, and Conservation Recommendations. That document is available on the NMFS website:

<https://alaskafisheries.noaa.gov/sites/default/files/biological-opinion-liberty-beaufort073118.pdf>.

BOEM announced the availability of the Record of Decision for the Final Environmental Impact Statement (FEIS) for the Liberty Development and



Production Plan (DPP) in the Beaufort Sea Planning Area in the Federal Register (83 FR 54136) on October 26, 2018, at <https://www.federalregister.gov/documents/2018/10/26/2018-23366/environmental-impact-statement-on-the-liberty-development-and-production-plan-in-the-beaufort-sea>.

The Record of Decision identifies the BOEM's selected alternative for the Liberty DPP. The Record of Decision and associated information are available on BOEM's website at <https://www.boem.gov/liberty>.

- 5) **Stakeholder Comment:** PHMSA's draft EA defines the purpose and need of the proposed action as to require the issuance of a special permit to allow Hilcorp to construct the subsea [PIP] system without applying [CP] to the inner sales oil pipeline as required by 49 CFR 195.563 and 195.573. This purpose and need is entirely inadequate because PHMSA necessarily considered an unreasonably narrow range of reasonable alternatives. PHMSA has a duty to protect the public and the environment from the dangers of transporting oil by pipeline. Specifically, the Pipeline Safety, Regulatory Certainty and Job Creation Act (PSA), 49 United States Code (U.S.C.) 60101, et seq., seeks to "provide adequate protection against risks to life and property posed by pipeline transportation and pipeline facilities by improving the regulatory and enforcement authority of [PHMSA] Id. § 60102. Accordingly, PHMSA should have focused its purpose and need inquiry on objectives that comport with these statutory duties, rather than on appeasing the desires of the applicant.

- **PHMSA Response:** Special permits are allowed through 49 U.S.C. 60118(c) – Compliance and Waivers - which gives PHMSA the authority to grant a special permit if PHMSA determines that the waiver is not inconsistent with pipeline safety. A special permit is an order by which PHMSA may grant to waive one or more of the Federal Pipeline Safety Regulations and is codified in 49 CFR 190.341. Hilcorp filed for a special permit in accordance with 49 CFR 190.341 and has provided the relevant documents for this special permit request. The Liberty Pipeline special permit request is to waive the CP criteria in 49 CFR 195.563 and 195.573, which requires CP of a pipeline and the monitoring of

pipeline external corrosion control. In its special permit request, Hilcorp Liberty proposed to construct a PIP design by installing the 12.75-inch carrier pipeline within a 16-inch casing pipe. The environmental assessment included two alternatives that compared the design, operations and maintenance of a PIP design (Alternative 2: Proposed Action) to a single wall pipeline without a casing (Alternative 1: No Action Alternative). The 16-inch casing pipe will have CP. The 12.75-inch carrier pipe for the crude oil will not have CP due to it being installed inside a casing pipe, which will shield it from the CP current. The special permit conditions address the possible introduction of an electrolyte, such as water or oxygen, around the carrier pipe or a metallic short in the carrier pipe, which would create an environment that allows corrosion to occur. Further, implementation of the special permit conditions by Hilcorp will provide alternative safety measures to assess, mitigate, and monitor the operations and on-going condition of the carrier and casing pipe to ensure integrity and safety is maintained throughout the operational life of the Liberty Pipeline.

- 6) **Stakeholder Comment:** NEPA evaluation must take place before decisions are made and before actions are taken. Such an approach ensures that agencies will take the requisite “hard look” at environmental consequences before approving any major federal action. But PHMSA’s purpose and need statement indicates that it did just the opposite. In other words, the purpose and need statement demonstrates that PHMSA already made the decision to grant the special permit and that its entire analysis was framed in a way to support that pre-determined outcome.

- **PHMSA Response:** The lead agency, Bureau of Ocean Energy Management (BOEM), has authority to approve siting and construction of the proposed Liberty Development Project. PHMSA received a special permit request for waiver from 49 CFR 195.563 and 195.573, which requires CP of a pipeline and the monitoring of pipeline external corrosion control. In its special permit request, Hilcorp Liberty proposed to construct a PIP design by installing the 12.75-inch carrier pipeline within a 16-inch casing pipe. For this design it is not possible to provide CP to the carrier/inner pipeline. The casing pipe would be cathodically protected in conformance with 49 CFR 195.563. PHMSA’s evaluation was to determine if

the special permit request should be granted to allow Hilcorp to deviate from the Pipeline safety regulations or whether the pipeline design must comply fully with 49 CFR Part 195. As stated above, PHMSA has no authority over pipeline siting or whether a pipeline is constructed. Based on its comparison of the no-action alternative and the proposed alternative, PHMSA proposed extensive technical special permit safety conditions to which Hilcorp must comply. Pursuant to PHMSA's jurisdiction under the Federal Pipeline Safety Laws and Regulations, Hilcorp may withdraw its special permit request at any time and construct a pipeline that fully complies with 49 CFR Part 195. In that case, Hilcorp would not require a permit from PHMSA.

- 7) **Stakeholder Comment:** In the alternatives analysis, the agency must provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact. The analysis must “rigorously” explore and objectively evaluate all reasonable alternatives. While an agency is not obliged to consider every alternative to every aspect of a proposed action, the agency must consider such alternatives to the proposed action as may partially or completely meet the proposals goal. In its draft EA, PHMSA considered only two alternatives: granting the special permit (the proposed action) and denying the special permit (the no-action alternative). In examining only these two alternatives, PHMSA failed to “rigorously explore” and “objectively evaluate” all reasonable alternatives to allowing Hilcorp to deviate from the Federal Pipeline Safety Regulations. For example, PHMSA failed to examine an alternative that would require a PIP system with CP, which is particularly inappropriate considering Hilcorp's stated intent to construct a PIP system and the draft EA's statement that stakeholders preferred this construction.

- **PHMSA Response:** PHMSA has no authority to impose the selection of a distinct alternative that exceeds the regulatory requirement. As stated above, assuming approval from other cooperating agencies, Hilcorp could proceed with construction of pipeline that complies with 49 CFR Part 195 without a permit from PHMSA. Nonetheless, PHMSA has carefully analyzed the proposed design of Hilcorp's proposed Liberty Pipeline, which deviates from 49 CFR Part 195. PHMSA analyzed all potential threats that could affect the pipeline, given the

proposed pipe in pipe design, and developed an extensive set of proposed conditions that are designed to ensure a level of safety that meets or exceeds the safety level in 49 CFR Part 195. PHMSA notes that the proposed casing pipe would be cathodically protected but that there is no known mechanism to supply electric current (i.e. CP) to a 5-mile inner/carrier pipeline that is welded inside a vacuum-sealed annulus. PHMSA is aware of any pipeline, whether jurisdictional to PHMSA or not, that utilizes a pipe in pipe design with CP reaching the inner/carrier pipeline.

- 8) **Stakeholder Comment:** PHMSA failed to consider an alternative that would include additional conditions in the special permit, such as increased inspection requirements. The failure to consider additional conditions is an especially glaring omission given that most proposed conditions merely recite the proposed pipeline design or regulatory requirements with which Hilcorp would be required to comply regardless of the issuance of the special permit. PHMSA also failed to consider an alternative that would restrict the time of year in which the pipeline operates, such as restricting activities from April to October, when waters near the Liberty Project are designated as biologically important areas for bowhead whale feeding, migration, and reproduction.

- **PHMSA Response:** PHMSA is requiring the Liberty Pipeline to be inspected more frequently and with a varied suite of assessment tools than existing pipeline safety regulations in 49 CFR Part 195. In addition, PHMSA is mandating the environmental conditions of the PIP annulus be controlled and monitored to prevent the creation of a corrosive environment. In order to respond to public concerns, the intervention threshold to address integrity threats has been lowered to allow more time to schedule and repair the pipeline when the least environmental damage is done. (See Special Permit Conditions 11, 13, 15-17, 21-32.)

- 9) **Stakeholder Comment:** The draft EA fails to take a hard look at the environmental impacts of granting the special use permit, including the increased risk of oil spills. All oil drilling is inherently dangerous and results in both chronic and disaster-related oil spills. An oil spill in the Arctic would have especially dire consequences for the environment and be impossible to clean up. The risks of oil spills are especially

heightened given the harsh Arctic environment and Hilcorp's documented history of accidents and safety violations. But PHMSA's Draft EA fails to adequately consider these realities.

- **PHMSA Response:** The lead agency BOEM published a final environmental impact statement (FEIS), which analyzed the potential impacts from an oil spill resulting from a failure of the proposed Liberty Pipeline. That analysis is available at <https://www.boem.gov/Appendix-A-OSRA/>. In the selected alternative that analyzes issuance of a special permit to allow the pipe in pipe design, which PHMSA developed in response to Hilcorp's special permit application, oil released from a failure of the inner/carrier pipe would be contained in the annular space between the inner/carrier pipe and the outer/casing pipeline. As a special permit condition, Hilcorp must install on the Liberty Pipeline a pressure relief valve connecting the annular space to secondary containment vessels (Special Permit Condition 21).

10) **Stakeholder Comment:** Climate change is causing, and will continue to cause, sea level rise, sea ice melt, and permafrost melt in the Beaufort Sea. Moreover, Alaskan shorelines are eroding at an accelerating rate due to the combined effects of sea-ice loss, increasing sea surface temperatures, increasing terrestrial permafrost degradation, rising sea levels, and increases in storm power and corresponding wave action. Indeed, coastal erosion rates have doubled in the past 50 years along the Beaufort Sea shoreline. Such destabilization can increase the risk of oil spills. For example, the Liberty DPP acknowledges that sea level will rise, and that this will increase the frequency and intensity of strudel scour, which can destabilize pipelines via upheaval buckling.

- **PHMSA Response:** The Liberty Pipeline special permit conditions have been changed to address the continued permafrost degradation, reduced stable sea ice period needed to construct and maintain subsea pipelines, and the risks associated with responding to potential spills in broken ice conditions. PHMSA believes the entire pipeline must be kept in serviceable condition in order to complete the mandated actions on the PIP segment. For that reason, the special permit conditions, including the assessment and repair criteria, are being extended beyond the PIP portion of the Liberty Pipeline project and will apply to the entire

Liberty Pipeline. (See Special Permit Conditions, “Special Permit Segment” definition).

11) **Stakeholder Comment**: PHMSA’s draft EA fails to address the real and significant risk of subsidence. Changing environmental conditions will impact the stability and operations of the drilling island and pipeline. This will also impact the safety and vulnerability of the operations, increasing the risk of accidents, oil spills, and other hazards. Permafrost melt will impact the pipelines and other infrastructure over the life of the project. These predictable changes in the near future must be analyzed and disclosed in an EA.

- **PHMSA Response**: The operator is required by existing Federal Pipeline Safety Regulations, specifically the integrity management regulations (49 CFR 195.452), to identify, assess and address risks that may impact the integrity and safe operation of their pipeline systems. Special Permit Condition 23 – Monitoring and Determination of Pipeline Strains and Condition 24 – Integrity Assessment will require integrity monitoring for any Liberty Pipeline subsidence and strains through the development and implementation of strain monitoring procedures and the usage of multi-dimensional geospatial pipeline mapping tools for pipeline movement and settlement, and the usage of high resolution deformation in-line inspection tools for pipeline bending or buckling. PHMSA will inspect this pipeline to ensure Hilcorp is in compliance with the existing integrity management regulations and this special permit, and will confirm Hilcorp is addressing the changing environmental conditions and that their safety measures are confirmed for effectiveness through regular ILI assessments.

12) **Stakeholder Comment**: According to the Alaska Oil and Gas Conservation Commission (AOGCC), Hilcorp has a documented pattern of safety violations and disregard for compliance with the law in Alaska. As documented by AOGCC, Hilcorp had more than two dozen violations over a 3.5-year period—so many that the agency concluded that “disregard for regulatory compliance is endemic to Hilcorp’s approach to its Alaska operations. In addition to these actions and violations documented by AOGCC, PHMSA itself has sent Hilcorp numerous warning letters for probable violations of pipeline safety regulations in Alaska since November 2015.

- **PHMSA Response:** PHMSA will monitor Hilcorp's compliance with the special permit conditions and take appropriate action if Hilcorp shows any disregard for compliance with the Permit conditions or applicable pipeline safety regulations. The special permit specifies that PHMSA has the sole authority to make all determinations on whether Hilcorp has complied with the specified conditions of the permit. Under 49 CFR 190.341(j), PHMSA has the authority to revoke, suspend, or modify the Special Permit if it finds that Hilcorp has failed to comply with any material term or condition of the permit. Finally, the special permit specifies that PHMSA may issue an enforcement action to Hilcorp if they fail to comply. PHMSA is committed to monitoring Hilcorp's compliance with the terms and conditions of this special permit.

13) **Stakeholder Comment:** Hilcorp should run a second set of tests before implanting any sort of pipeline. These tests should center around the parameters they missed beforehand such as ice gouging frequency, corrosion, upheaval buckling, and occurrence probabilities for thaw subsidence.

- **PHMSA Response:** The special permit conditions require Hilcorp to conduct extensive tests during and immediately after construction of the Liberty Pipeline to ensure the pipeline is ready to receive fluids. PHMSA is also requiring, in exceedance of existing regulations, another inline inspection tool assessment shortly after commissioning the pipeline to confirm that the pipeline design, construction, and operation have not manifested any problems or pose a risk to the sensitive Arctic environment. (See Special Permit Conditions 24(a) through (d)).

#### **Analysis:**

PHMSA developed the special conditions to achieve an equivalent or higher level of safety by significantly decreasing the likelihood of a release of product (crude oil) in the *special permit segment*. The special permit conditions are summarized in this section.

Hilcorp requested the CP requirements in 49 CFR 195.563 and 195.573 be waived for the following reasons:

- 1) Hilcorp seeks a special permit to operate the inner, sales oil, or carrier pipe without CP.

The special permit would waive the requirements of 49 CFR 195.563(a) and 195.573.

This section states in part: “Each buried or submerged pipeline that is constructed, relocated, replaced, or otherwise changed after applicable date in 49 CFR 195.401(c) must have cathodic protection.”

- 2) CP is a method to control corrosion by minimizing the difference in electrical potential between an anode and a cathode. This is achieved by applying a current to the pipeline, ideally resulting in a single potential for the entire pipeline, thereby eliminating potential differences on the pipe.
- 3) The PIP configuration makes it impractical to install or monitor a CP system on the inner pipe primarily due to the limited annular space between the inner and outer pipes, and due to the fact that the annulus would be sealed at each end to provide an airtight environment. If properly dried prior to operations startup and successfully maintained, the inner pipe will not be exposed to an electrolyte such as seawater, soil, oxygen, or water vapor. The National Association of Corrosion Engineers (NACE) defines corrosion as “the deterioration of a material, usually metal, which results from the reaction with its environment.” (NACE SP0169-2007 at page 2.) Even if it were practical to apply CP to the inner pipe, the protection would serve no purpose in the absence of an electrolyte.
- 4) The special permit allows Hilcorp to use a PIP system along with implementing the special permit conditions, which are designed to prevent the entry of moisture into the casing and detect its presence in the event that these measures are not effective. A PIP system also provides protection from external forces, secondary containment in the event of a release from the sales oil pipeline, and additional methods for detecting leaks if a spill were to occur. Nonetheless, the purpose of the proposed special permit would be to impose enforceable safety conditions to ensure the integrity of the casing pipe and annulus, so that the inner carrier pipeline is protected to an equal or greater extent as a pipeline that operates with CP, in accordance with 49 CFR 195.563(a).
- 5) The PIP design will use a heavy wall (0.500-inch wall thickness) inner carrier pipe and heavy wall (0.625-inch wall thickness) outer casing pipe to provide superior protection from failures caused by external forces. In the unlikely event of an inner pipe failure, a combination of the outer casing pipe, monitoring of the PIP annulus, and external storage capacity allows for detection of such a failure and containment



of a release of oil from the inner pipe. In the unlikely event of a rupture of the carrier pipe, the outer casing pipe would protect against the release of oil into the environment because the annulus will be equipped with continuous pressure monitoring and a relief valve tied into external storage. Therefore, if a leak were to occur in the carrier pipe, pressures inside of the PIP/annulus would not cause the 16-inch casing to leak or rupture.

### **Operational Integrity Compliance:**

PHMSA has reviewed this special permit request to ensure that integrity threats to the pipeline in the *special permit segment* are addressed in the operator's design, material, construction, operations and management plan (O&M Procedures and specifications). PHMSA carefully designed a comprehensive set of conditions that Hilcorp is required to meet in order for the special permit to be granted for the Liberty Pipeline *special permit segment*. The special permit conditions are available in Docket No. PHMSA-2017-0091 at: [www.regulations.gov](http://www.regulations.gov). A summary of the special permit conditions are below:

1. **Applicable Regulations**
  - States that all regulations, except those specifically waived will apply to the pipeline.
2. **Maximum Operating – Pressure, Temperature, Strain and Stress Limits for the Pipeline**
  - Limits strains, temperature and pressure that can damage and cause wear to the steel pipeline. This condition specifies the design and operating parameters upon which the special conditions are predicated.
  - Due to the significant strains imposed on the pipeline due to environmental conditions and design, the strain parameters will be imposed to limit the strain that can lead to integrity threats and the longevity of the pipeline.
3. **Integrity Management Program**
  - Hilcorp will be required to treat the pipe in pipe segment as a high consequence area, meaning that the safety requirements 49 CFR 195.452 apply.
4. **Design, Specifications and Procedures**
  - Hilcorp will be required to develop and implement written procedures for the material, design, construction, operations and maintenance of the pipeline.
  - These conditions are intended to prevent conditions that could lead to unintended stresses, strains, or creation of defects to or on the pipeline.
5. **Pipe – Carrier**
  - The permit will require the carrier pipe to be 12.75-inch diameter and have 0.500-inch wall thickness.
  - Includes specifications to ensure proper pipe manufacturing processes and mill testing, required strength, diameter, toughness, and thickness.

- These requirements will protect the pipeline against, strains, corrosion, and cracking. The mill tests seek to identify metal defects that could threaten integrity throughout the life of the pipeline.
6. **Carrier Pipe Toughness**
- This condition requires the use of Charpy-V-Notch (CVN) impact tested in accordance with API 5L, which ensures a high level of metal toughness.
  - Toughness in metal is the ability to absorb energy and plastically deform without fracturing. This quality helps protect against pipeline failure.
7. **Carrier Pipeline Design Factor**
- The pipeline design factor is a maximum of 0.72. The bulkhead fitting and tie-in piping (two (2) pipe joints on each side of bulkhead for the 12.75-inch diameter carrier pipe) must have a maximum design factor of 0.60.
  - These design factors ensure that the pipeline facility is designed to handle a greater level of pressure and strain than actually anticipated on the pipeline.
8. **Bends**
- No manufactured hot bends or field cold bends are allowed for the subsea cased pipeline, and segments from buried to above ground at the shore must gradually sweep to shore. Directional changes in the pipeline must maintain specific stress levels below industry standards.
  - Excessive forces can collect at manufactured or field bends, thereby causing damage (e.g. cracking). This requirement reduces the risk of failure along bends in the pipeline.
9. **Flanges and Fittings**
- Flanges and fittings must comply with specific industry standards so that they have sufficient strength to withstand the Design and Operating Parameters.
10. **CP – Carrier and Casing Pipe**
- The casing pipe will be cathodically protected in compliance with 49 CFR 195.563. CP is an electric current applied to a pipeline to prevent corrosion. CP slows or prevents corrosion from occurring in areas where the coating has become disbonded or been removed from the pipe.
  - The special permit will require a fusion bonded epoxy coating on the casing pipe external surface. This coating type should prevent corrosion (where it is not damaged) and will not shield the CP from the pipe, which could allow for aggressive corrosion. It is not possible to apply CP to the carrier/inner pipe as required by the Pipeline Safety Regulations, which is the reason Hilcorp requested the special permit from PHMSA.
  - The 16-inch casing pipe must be internally coated with the exception of a short segment (less than 4-inches wide) at pipe girth welds. This requirement is a contingency to the possible loss of a dry, inert annulus environment and the creation of a potentially corrosive environment between the 12.75-inch carrier and 16-inch casing (internal portion of the casing). The internal casing pipe coating will help to keep internal steel mill scale and corrosion pitting from occurring after pipe manufacturing and during the transportation, storage, construction and commissioning stages of the pipeline. Since the 12.75-inch carrier pipe is being inserted into the 16-inch casing pipe, it is impracticable to coat the 4-inch wide

area at girth welds inside the 16-inch casing due to clearance space issues between the casing and carrier pipes.

#### 11. **PIP Design**

- In the event of a failure of a pipeline that fully complied with the 49 CFR Part 195, as in the no-action alternative, a pipeline failure would result in a release of the contents of the pipeline into the environment at a high pressure. Hilcorp is requesting to use a pipe in pipe design so that, in the event of a failure of the carrier pipe, the casing pipe will contain the crude oil that would otherwise be released into the Beaufort Sea. To ensure the functionality of this design Hilcorp will be required to:
  - Fill the sealed space between the carrier/inner pipe and the casing/outer pipe, known as the “annulus” or “annular space” with an inert gas such as Nitrogen or Argon. Unlike ambient air, which includes oxygen, this inert gas will not react with the pipeline metal to cause corrosion.
  - Maintain the pressure of the inert gas in the annulus at -10 pounds per square inch gauge (psig), which is a slight vacuum through connection to a vacuum system.
  - Monitor the pressure of the annulus. In the event of an increase in pressure, it may signal a breach of the carrier pipe, in which case the annulus could fill with crude oil. An increase in pressure may also signal a breach in the casing pipe, in which case the annulus could fill with sea water.
  - Maintain dew point and monitor the temperature of the annular space. A dew point at or below -10 °F to prevent liquid drop out, in the event that any water vapor remains within the inert gas. Water condensation in the annulus could cause external corrosion to the carrier and casing pipe. In the event of an increase in pressure in the annulus, temperature monitoring showing a low temperature could indicate the presence of sea water, and a high temperature could indicate the presence of crude oil.

#### 12. **PIP Bulkhead Design**

- The special permit will include requirements for the bulkhead fittings to meet the regulations, standards and undergo tests to ensure that they can maintain the high stresses that they will be subject to due to the opposite forces applied by the two pipes.

#### 13. **Bundle and Fiber Optic Cable**

- The bundle will include the PIP system, fiber optic cable, spacers, a utility line, and bundle straps.
- The fiber optic cable will be located outside the PIP system and will monitor temperature along the length of the PIP system. It will have the ability to communicate temperature data to the SCADA system. An increase in temperature as recorded by the fiber optic cable could indicate a release of the heated crude oil.
- This condition will allow prompt notification of temperature change allowing proper emergency actions.
- The bundle must be at least seven feet below the subsea mudline to protect against currents and external forces.

**14. Pipe-External Coating**

- The special permit will include requirements to ensure the proper application, thickness, and repair of the fusion bonded epoxy coating to the pipe. A properly applied coating provides protection against external corrosion without shielding CP.

**15. Monitoring System**

- The special permit will require that the pipeline is monitored at all times for pressure, temperature, and flow rate. Changes in any of these values could indicate a failure of the pipeline or an emergency situation.
- The special permit conditions specify the placement of remote closure valves, pressure and temperature transmitters, and flow meters.

**16. Casing Pipe- Design and Operating Properties**

- The special permit will require that the outer casing pipe meet specific design specifications and undergo certain tests to ensure strength and toughness of the pipe metal.
- The special permit will set specific parameters for normal operating pressure, design pressure, maximum operating pressure, temperature, maximum allowable combined stress, and annulus relief valve pressure.
- Operating within these parameters protects the pipe metal from additional fatigue and stresses that could threaten the integrity.

**17. Construction Quality Control**

- The special permit will require that Hilcorp develop and implement a right of way construction monitoring program for procedures, specifications, and training personnel in all aspects of pipeline construction, including:
  - pipe inspection,
  - hauling and stringing pipe,
  - welding,
  - non-destructive examination of girth welds,
  - applying and testing field applied coating,
  - lowering the pipeline into the subsea trench,
  - backfilling, and
  - hydrostatic testing including dewatering and drying.
- The special permit will require that Hilcorp develop a Subsea Trench Quality Control Plan and Procedures, which would require:
  - chemical testing of trench soils to predict corrosion risks,
  - trench depth monitoring,
  - trench bottom roughness profiling,
  - backfilling requirements, and
  - use of pipe end protection caps to keep out water during construction.
- Coating application quality control specification for external coatings of both casing and carrier pipe must be developed, implemented, and personnel must be trained to ensure carrier and casing pipe surface cleanliness, application temperature control, adhesion quality, cathodic disbondment, moisture permeation, bending, and minimum coating thickness for girth weld and repair coatings. Both the carrier and casing pipe must be externally coated for corrosion protection.

**18. Carrier Pipeline Girth Welds**

- The special permit will include requirements for welding procedures and welder tests. If a carrier girth weld test reveals a crack in the weld, the cracked weld must be cut out.
- Over the life of a pipeline, defects in welds resulting from improper procedures can develop into threats to the pipeline integrity, especially for pipelines with higher levels of stress.
- The carrier pipe and coating must be protected from weld splatter.

**19. Casing Pipe Girth Welds**

- The special permit will include requirements for welding procedures weld tests. If a casing girth weld test reveals a crack in the weld, the crack must be cut out.
- Over the life of a pipeline, defects in welds resulting from improper procedures can develop into threats to the pipeline integrity, especially for pipelines with higher levels of stress.

**20. Casing Isolators**

- The special permit will require maximum casing isolator spacing of 10 feet consistent with manufacturer specifications.
- The special permit would require the casing isolators to withstand anticipated pipeline loads, deflection, and movement in order to maintain continuous separation between the carrier and casing pipe.

**21. Relief Storage Tank**

- The special permit will require that a pressure increase in the annulus, caused by the annulus filling with oil or seawater to activate a relief valve, and discharge the fluid to a relief storage tank or vessel of adequate capacity.
- In the event of a failure to the carrier pipe, the pressure would rapidly increase in the annulus. This could cause an overpressure situation the annulus, and a defect in the unpiggable casing could lead to failure, which would lead to oil discharging into the Beaufort Sea.

**22. Operations & Maintenance (O&M) Procedures**

- The special permit will require Hilcorp to develop and implement O&M procedures for operating personnel to ensure proper operation of the CP system, the monitoring of the annulus, implementation of integrity management, and other operating parameters such as monitoring pressure and temperature.
- Rigorous and detailed O&M procedures are intended to reduce the risk of oversight or human error in the operation of the pipeline that could lead to the creation or growth of damage, corrosion, or strain to the pipeline.

**23. Monitoring and Determination of Pipeline Strains**

- The special permit will require that if specific locations of the pipeline experience high levels of strain, as detected through ILI tools or otherwise, strain demand monitoring processes or devices will be installed or implemented. If high strain is identified, the special permit will require procedures to monitor, evaluate, model, and mitigate strain.
- This monitoring will be intended to prevent the development and growth of anomalies on the pipeline, such as bending, denting, buckling, crumpling, cracking or corrosion that can directly or indirectly result from strain accumulating in vulnerable areas of the pipe.

#### **24. Integrity Assessments**

- The special permit will require Hilcorp to perform pipeline assessments using the prescribed ILI tools at the following intervals:
  - Before Pipeline Startup:
    - high resolution (HR) deformation tool,
    - multi-dimensional geospatial mapping tool, and
    - remediate anomalies; all dents treated as “top side” dents.
  - Baseline Assessment- within 15 months of startup, run following tools:
    - HR metal loss,
    - HR deformation, and
    - multi-dimensional geospatial mapping.
  - Second Assessment- within 39 months of startup, run following tools:
    - ultrasonic technology (UT) for metal loss and cracking,
    - HR Deformation, and
    - Multi-dimensional geospatial mapping.
  - Periodic Assessments- every 2 to 3 years depending on existing integrity data:
    - HR metal loss,
    - HR deformation,
    - multi-dimensional geospatial mapping, and
    - ultrasonic (UT) for metal loss and cracking every other assessment.
- The special permit will require that Hilcorp install a calibration spool with the same PIP design with certain installed defects to test ILI tool accuracy because calibration digs are not feasible in the subsea environment.
- If tool data reveals contact between the carrier and casing pipe, Hilcorp must run HR-deformation and Multi-dimensional geospatial pipeline mapping tools, assess the tool data remediate as required by Part 195.
- These conditions require Hilcorp to run specific ILI tools more often than required by 49 CFR Part 195 is intended to more quickly identify and respond to risks posed by the forces imposed on the carrier and casing pipe that can lead to the creation and growth of anomalies, which can cause failure. The tool runs would detect the presence and characteristics of anomalies, allowing the operator to remediate or monitor the anomalies, as required.

#### **25. Analysis of ILI Tool Data and Discovery of Actionable Anomalies**

- The special permit will require Hilcorp to factor in ILI tool accuracy and applicable anomaly growth rates when analyzing ILI tool data.
- The purpose of this condition will be to reduce risk posed by anomalies by attempting to ensure rigorous and accurate characterization of anomalies so that they are remediated in an appropriate time frame, that also meets permitting and scheduling requirements to minimize environmental disturbance, so that they are not able to threaten pipeline integrity.

#### **26. Engineering Critical Assessment for Cracks**

- The special permit will require that Hilcorp perform an Engineering Critical Assessment for any crack 50% or less of wall thickness in the inner carrier pipe. Any crack greater than 50% wall thickness or of a certain failure ratio would be treated as an immediate repair.

- The purpose of this condition is to remediate cracks of a lesser depth than required by 49 CFR Part 195 due to the risks from strain.
27. **Leak Detection System**
- The special permit will require:
    - a mass balance system with flow meters at pipeline intersection points,
    - a PIP annulus monitoring system for pressure and temperature, and
    - a fiber optic cable with temperature monitoring.
  - These conditions are intended to ensure that changes to the annulus and external temperature that could indicate a failure of either the carrier pipe or casing pipe are quickly identified so that Hilcorp can take proper remediation/response actions.
28. **Monitoring Systems – Carrier Casing Pipe and PIP Annulus**
- This condition will require monitoring for changes in: pressure, temperature, settlement, flow, and dew point.
  - These conditions are intended to ensure that changes to the carrier, casing, and annulus that could indicate a failure of either the carrier pipe or casing pipe are quickly identified so that Hilcorp can take proper remediation/response actions.
29. **Monitored Response Procedures**
- This condition will require that if the carrier pipe temperature exceeds the maximum design temperature of 150° F, Hilcorp must reduce the operating temperature within two hours. If temperature exceeds 150° F for more than 24 hours, Hilcorp must notify PHMSA.
  - The special permit condition will require monitoring and notification to PHMSA for specific temperature changes to the soil surrounding the bundle.
  - These conditions protect against excessive heat that can damage the pipeline and require monitoring for temperature changes that can indicate a failure has occurred.
30. **CP System Monitoring of the Casing Pipe**
- This condition will require that the casing pipe is cathodically protected within six (6) months of the placing the subsea segment into service. The inner carrier pipe cannot be cathodically protected, which is the reason that Hilcorp submitted the special permit request.
  - Hilcorp will have to install test leads and perform close interval surveys one (1) year after construction and then every five (5) years. If more than 20% of test leads fail, the close interval frequency will change to every three (3) years.
  - This condition contains specifications about the CP monitoring system and procedures. CP potential readings would be taken yearly and according to specifications in the special permit.
  - These conditions are intended to ensure consistent CP on the casing pipe. When properly maintained, CP provides strong protection against corrosion. The tests are intended to find any gaps in protection.
31. **SCADA and CPM Systems**
- The supervisory control and data acquisition (SCADA) and computational pipeline monitoring (CPM) leak detection systems will be required to comply with 49 CFR 195.444 and 195.446.
32. **Data Integration**

- This special permit condition requires that Hilcorp conduct, maintain, and annually update data integration for all special permit findings and remediation. PHMSA may request this data starting with the 2<sup>nd</sup> annual report.
- These conditions are intended to ensure that Hilcorp properly integrates data to view its system holistically, to better identify and remediate pipeline safety threats.

**33. Environmental Assessments and Permits**

- The special permit will require Hilcorp to evaluate environmental consequences of land disturbances or water crossings needed to implement the proposed special permit conditions. Hilcorp must comply with all local, state, and federal environmental permits in this process.

**34. Notices to PHMSA**

- This special permit condition requires Hilcorp to provide various notifications to PHMSA during the design and construction and within 2 business days of discovery of an immediate repair condition to ensure close oversight.
- This condition allows PHMSA to proactively identify issues.

**35. Annual Report**

- This special permit condition requires Hilcorp to prepare and submit an annual report to PHMSA and the public that includes the following information:
  - any Integrity threats identified by ILI tools,
  - all reportable incidents,
  - all repairs,
  - any ongoing damage prevention, corrosion, and longitudinal strain preventative initiatives and a discussion of the success of the initiatives,
  - data integration information, including irregular changes in pressure, temperature, and due point Instances the pipeline exceeded operational parameters, and
  - corporate changes affecting regulatory responsibilities.
- This condition allows PHMSA and the public to have a strong understanding about the integrity threats and maintenance of the pipeline to ensure compliance and sound decision-making.

**36. Documentation**

- This special permit condition will require Hilcorp to maintain and provide the following upon request:
  - Records are required by 49 CFR Part 195 and 8-hour hydrostatic test at 1.25 times maximum operating pressure.
  - Steel mill test reports showing wall thickness, yield strength, tensile strength, and chemical composition. This must be maintained for the life for the life of this special permit.
- This condition requires the maintenance of records that are critical to understanding potential integrity risks both in the short term and long term life of the pipeline.

**37. Certification**

- A Hilcorp senior executive officer, vice president or higher must certify:
  - The pipeline meets the special permit conditions.



- The O & M manual has been updated to include all additional operation and maintenance requirements of the special permit.
- Documentation requirements are complete.
- All certification requirements in the special permit are complete.
- This condition requires the involvement and oversight of a Hilcorp senior executive officer to better ensure compliance, communication, and awareness.

The special permit contains conditions to ensure Hilcorp meets or exceeds the threshold requirements with equivalent safety and to ensure that granting the special permit will not be inconsistent with safety.

Although the proposed inner pipeline will not receive CP as required by 49 CFR Part 195, PHMSA finds that the design, construction, and operation of the carrier pipeline, when in full compliance with the conditions described in the special permit, will meet or exceed the level of safety that a pipeline operating in full compliance would achieve. The casing protects the carrier/inner pipeline from exposure to an electrolyte, therefore reduces the risk of pipeline wall thinning due to corrosion. The casing also protects the sales oil pipeline from external force damage. The casing will also be connected to a relief storage containment, which could contain crude oil leakage from the carrier pipe, in the event of an increase in pressure and failure of the casing pipe.

The casing pipe and the annulus further provides a thermal barrier between the sales oil pipeline and the surrounding environment, which would reduce the potential thaw settlement, and reduce the calculated pipe stresses.

#### **Past Enforcement History – January 1, 2008 through February 26, 2019**

Since the beginning of 2008 through February 26, 2019, Hilcorp was cited in 14 enforcement cases with a total of \$198,700 in proposed civil penalties. PHMSA initiated three (3) Notices of Amendments, one (1) notice of probable violation, one (1) safety orders, and nine (9) Warning Letters against Hilcorp.

Below is a table of PHMSA enforcement matters of all types in all PHMSA Regions for Hilcorp from January 1, 2008 through February 26, 2019:

Status	Corrective Action Order	Notice of Amendment	Notice of Probable Violation	Safety Order	Warning Letter	Total
CLOSED	0	3	0	0	9	12
OPEN	0	0	1	1	0	2
<b>Total</b>	<b>0</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>9</b>	<b>14</b>

PHMSA has determined that imposing the conditions and limitations summarized in this document will ensure that granting the special permit for lack of CP in the *special permit segment* of will not be inconsistent with safety.

### **Findings:**

Based on the information submitted by Hilcorp and PHMSA's analysis of technical, operational and safety issues, and given the conditions that will be imposed in the special permit, PHMSA finds that granting this special permit to Hilcorp to operate the Liberty Pipeline *special permit segment* originating on the Liberty Island in the OCS and extending south into State of Alaska waters, to a shore crossing approximately 5.68 miles from the island located west of the Kadleroshilik River Delta, without CP of the 12.75-inch diameter pipe will not be inconsistent with pipeline safety.

**Completed in Washington DC on:** April 29, 2019

**Prepared By:** PHMSA – Engineering and Research Division