# CWA 401 Water Quality Certification Request

version 2.17

**(Submission #: HQP-VP3F-4PHJF, version 1)**

## Details

**Site:** Quokka Development Project

**Submission ID** HQP-VP3F-4PHJF

## Form Input

### Form Instructions

#### Form Instructions

Instructions for filling out the 401 Prefiling Meeting Request Form are located on the Alaska DEC website at the link below.
401 Prefiling Meeting Request Form Instructions

**Agents**: For Delegation of Authority to act on behalf of the applicant in processing the application, use the following form, have signed, and upload with application.

- Delegation of Authority - 401 Application

### Contact Information (1 of 2)

#### Required Contacts

The following **Contact Roles are *REQUIRED***. Please select the appropriate role(s) for each contact and complete the contact details. Multiple role(s) may be assigned to each unique individual.

- **Applicant** (Responsible Party)
- **Billing Contact**

**Contact Role(s)**
Applicant

**Contact**

**Prefix**
*NONE PROVIDED*

| First Name | Last Name |
|---|---|
| Alan | Johnson |

**Title**
Vice President Operations

**Organization Name**
Oil Search (Alaska), LLC, a subsidiary of Santos Limited

| Phone Type | Number | Extension |
|---|---|---|
| Business | 907-375-4600 | |

**Email**
Alan.Johnson@santos.com

**Mailing Address**

501 West 5th Ave

Anchorage, AK 99501

United States

## Contact Information (2 of 2)

### Required Contacts

The following **Contact Roles are *REQUIRED***. Please select the appropriate role(s) for each contact and complete the contact details. Multiple role(s) may be assigned to each unique individual.

- **Applicant** (Responsible Party)
- **Billing Contact**

**Contact Role(s)**
Application Preparer
Billing Contact
Agent

**Contact**

**Prefix**
*NONE PROVIDED*

| First Name | Last Name |
|---|---|
| Sofia | Laughland |

**Title**
Permitting Lead

**Organization Name**
Oil Search (Alaska), LLC, a subsidiary of Santos Limited

| Phone Type | Number | Extension |
|---|---|---|
| Business | 907-268-0788 | |

**Email**
Sonia.Laughland@santos.com

**Mailing Address**

501 West 5th Ave

Anchorage, AK 99501

United States

## Project / Facility Site Info

### Identify the applicable federal license or permit

A copy of the federal permit or license application is required to be submitted with the request for the water quality certification. (18 AAC 15.130, 18 AAC 15.180)

**Federal Agency**
Army Corps of Engineers (USACE)

**Permit License Number (ex. USACE: POA-XXXX-XXXX; FERC: FERC-xxxx-xxxx; EPA: AK#######)**
POA-2026-00208

**Project Name or Title**
Quokka Development Project

**Primary Receiving Waterbody Name**
*NONE PROVIDED*

**Estimated Project Dates (+/- 30 days)**

| Project Estimated Start Date | Project Estimated End/Completion Date |
|---|---|
| 11/01/2027 | 10/01/2031 |

**Approximate date(s) when any Discharge(s) may commence (+/- 30 days)**

| Description | Discharge Estimated Start Date | Discharge Estimated End Date |
|---|---|---|
| Gravel infrastructure construction | 12/01/2027 | 10/01/2031 |

**Project Description (Nature of Activity, include all features)**
Oil Search (Alaska), LLC, a subsidiary of Santos Limited (Santos) is proposing development of hydrocarbon deposits from its oil and gas leaseholds on the North Slope of Alaska. The Quokka Project (Project) targets oil deposits in the Quokka reservoir. Santos would drill wells and construct and operate infrastructure and facilities to produce and transport sale-quality oil to the Trans-Alaska Pipeline System (TAPS). The Quokka Project would include two drill sites, a central processing facility, infield and import/export pipelines, infield roads and screeding at Oliktok Dock. The Project would also involve construction activities for supporting infrastructure, such as powerlines and fiber optic lines.

The Project would result in unavoidable temporary and permanent discharges into wetlands and other waters located within the project area. Permanent discharges would affect a total of 129.2 acres of wetlands and other waters, including 128.9 acres of gravel infrastructure and 0.3 acre of pipeline VSMs. Project development would require 1.62 million cubic yards (MCY) of clean gravel fill and 57,430 cy of sand slurry. The Project would also affect a total of 0.2 acre of uplands.

Gravel Pads
Santos would construct gravel pads with a minimum gravel thickness of 6 feet and 2H:1V side slopes. None of the pads would be within a mapped floodplain.

Quokka Drill Site A (QDA) and Quokka Drill Site B (QDB)
The QDA drill site (Sheets 10 and 11) and the QDB drill site (Sheets 12 and 13) would each accommodate up to 50 production and injection wells with 20-foot spacing between wellheads. Each drill site would also accommodate drilling equipment and drilling support facilities including hydraulic fracturing equipment, drilling mud and cement tanks, gathering facilities, diesel storage tanks, pipeline pigging and metering facilities, a communication tower, cold storage, emergency response equipment and drilling laydown areas. A service road at least 30 feet wide would be constructed around the perimeter of each pad to facilitate safe and efficient access to pad infrastructure. Routine well testing and process fluid heating would occur at the drill sites, with the majority of processing equipment locaed at the QPF.

Quokka Processing Facility (QPF)
The QPF pad, located near QDB, would accommodate the processing and utilities modules that would process multiphase product (mixture of crude oil, natural gas and water) from the two drill sites (Sheets 8 and 9). Water separated from the oil would be re-injected back into the subsurface formation to help maintain pressure or disposed of via underground injection. Separated gas would be transported back to the drill sites via pipelines for gas lift and gas injection into the subsurface formation to help maintain pressure. Sales-quality oil would be transported via pipeline from the QPF to a tie-in with the existing Pikka sales oil pipeline. The QPF would be sized to process approximately 80,000 barrels of oil per day.

Processing facilities at the QPF would be comprised of a combination of truckable and sealift modules. These include equipment designed for phase separation, heating and cooling, pumping, gas treatment and compression for gas lift, gas injection and water treatment for water injection. The QPF would also include metering and pigging facilities; a communication tower; generating facilities; a tank farm consisting of crude oil, produced water, production chemical and methanol storage tanks; two underground injection control (UIC) wells for disposal of Resource Conservation and Recovery Act
(RCRA)-exempt and nonhazardous waste, such as produced water; construction material and equipment staging areas; and a high

pressure/low pressure flare stack.

Quokka Tie-in Pad (QTP)
The tie-in pad, QTP, would provide space for tie-in of the Quokka import/export pipelines (sales-oil, fuel gas, and seawater pipelines) to the Pikka import/export pipelines (Sheets 14 and 15). QTP infrastructure would include a pig launcher and receiver, a metering skid, pipe rack, power generation module, laydown area and a communications tower. The pad would be connected to the existing Pikka road by a gravel access road.

Valve Pads
Two valve pads would be built on the QDA road, one on each side of the Miluveach River crossing (Sheets 25 and 26). Valve pads provide space for the inclusion of shut off valves on either side of the river crossing. The valve pad to the south of the Miluveach River would include a tundra access ramp for maintenance, spill response or other purposes (Sheet 26).

New Gravel Roads
Santos would construct two infield roads to connect the Project with the existing Pikka road system:
- A road from the existing Pikka road system south to the QPF that would then continue to drill site QDB (Sheets 20 and 21).
- A road from the existing Pikka road system north to drill site QDA (Sheets 17-20).

Infield roads would be a minimum of 32 feet wide at the crown (minimum 52 feet at the base) to accommodate drill rig movement (Sheet 23). The roads would have a gravel thickness of at least 5 feet and 2H:1V side slopes. The road from the QPF to QDB would have one subsistence access ramp (Sheet 21) and the road to QDA would have two subsistence access ramps (Sheets 17 and 18) to facilitate access and road crossings for off-road travelers. Each ramp would have a slope of approximately 15 percent (Sheet 24).

Santos would site and design (both size and number) culverts at streams and other primary conveyance paths. Santos would also install cross-drainage culverts based upon local drainage patterns and field observations to accommodate meltwater during spring breakup (Sheets 27 and 28). An engineer would field-verify final culvert locations to confirm that natural drainage patterns are maintained. Culverts at fishbearing streams would be built to accommodate fish passage (Sheet 29).

In addition to culverts, the QDA access road would include three bridge crossings: two at waterways and one over the Pikka import/export pipelines. There would be a multi-span bridge across the Miluveach River consisting of steel girders with precast concrete decks and a 32-foot clear width between the faces of removable steel railings (Sheet 31). The bridge would include 42-inch diameter pipe pile foundations
and sheet pile abutments. Twelve piles would be placed below ordinary high water (OHW) and would have a footprint of 115 square feet.

There would be a single-span crossing of Trouble Creek just south of the QDA pad. The bridge would include 42-inch diameter pipe pile foundations; placement of piles will be avoided within the active channel to the extent practicable (Sheet 30).

Additionally, a existing pipeline overpass would be required where the QDA access road crosses over the existing Pikka import/export pipelines. The existing pipeline overpass would use 42-inch diameter pipe pile foundations and would be designed to allow a drill rig to access QDA (Sheet 33).

Pipelines
The Project would include construction of import/export and interconnecting (infield) pipelines. All pipelines would rest on pipeline supports. Each pipeline support would be made up of a horizontal support member (HSM) supported by vertical support members (VSMs) constructed from one or two 8- to 24-inch-diameter pipe piles (with an up to 36-inch diameter casing) spaced approximately 55 to 65 feet apart. These pipeline supports (referred to as pipe racks) would also carry power and fiber optic cables, as discussed further in Section 3.2.2.2. Where feasible, pipelines would be located parallel to gravel
roads at a distance between 500 and 1,000 feet to minimize caribou disturbance and excessive snow drift accumulation while facilitating access for pipeline inspection, monitoring, repairs, modifications and testing. All pipelines and suspended cables would be a minimum of 7 feet above the summer ground surface except where pipelines intersect a road or pad. Where pipelines cross road embankments, pipelines would be encased in structural steel casings buried within the roadway section (Sheets 43 and 44).

Santos would coat the external surface of insulated pipelines with fusion bonded epoxy to prevent underinsulation corrosion. Pipelines containing temperature-controlled fluids and multiphase product would include an insulation system consisting of polyurethane foam insulation covered with an interlocked sheet metal jacket having a nonreflective finish. Santos would hydrostatically test the integrity of the pipelines prior to operation.

Infield Pipelines
Infield pipelines would connect the drill sites to the QPF (Sheets 38 through 41). The infield pipe rack would include:
- A 24-inch-diameter pipeline to transport multiphase product from each drill site to the QPF,
- An 8-inch-diameter gas-lift pipeline to transport treated gas from the QPF to the drill sites,
- A 6-inch diameter gas injection pipeline to transport treated gas from the QPF to the drill sites,
- A 10-inch diameter pipeline to transport seawater from the QPF to the drill sites for injection,
- A 10-inch-diameter pipeline to transport produced water from the QPF to the drill sites for reinjection.

The QDA infield pipeline would include pipeline crossings of the Miluveach River and Trouble Creek. The Miluveach River pipeline crossing would include 36-inch diameter pipe pile foundations of which two would be located below OHW for a footprint of 14 square feet (Sheet 46). The Trouble Creek pipeline crossing would include 36-inch diameter pipe pile foundations; the VSMs for the pipeline crossing would span Trouble Creek and no piles would be located below OHW (Sheet 46). Two valve pads would be built on the

QDA road, one on each side of the Miluveach River crossing (Sheets 25 and 26).

Import/Export Pipelines
Import/export pipelines would connect the QPF to the QTP (see Figure 1; Sheets 34 and 35) and would include:
- a 16-inch-diameter pipeline to transport sales-oil export to the tie-in with the Pikka sales oil pipeline north of the QPF,
- a 16-inch pipeline to transport seawater from the existing Pikka pipelines at the QTP to the QPF,
- an 8-inch pipeline to transport fuel gas from the existing Pikka pipelines at the QTP to the QPF.

The import/export pipelines would be built on the same pipe racks as the infield pipelines to QDA from the QPF to QTP.

Santos would also construct a utility pipeline to move fluids between the QPF and NPF (Sheets 20, 22, 36 and 37). The utility pipeline would be on the same pipe rack as the Quokka QDA infield pipelines from the QPF north to the point at which the utility pipeline would turn northwest towards the NPF. The utility pipeline would then be constructed on new pipeline supports that parallel the existing Pikka pipelines to the NPF.

**Project Purpose (Describe the reason(s) for discharge)**
The purpose of the proposed Project is to enable Santos to safely and economically produce commercial quantities of liquid hydrocarbons from its Quokka Unit leasehold on the North Slope of Alaska. This includes developing infrastructure to access and extract hydrocarbons, processing them near the production areas, and transporting sales-quality oil by pipeline to the Trans-Alaska Pipeline System (TAPS). A secondary purpose is to facilitate further delineation of hydrocarbon-bearing formations within the leasehold using infrastructure developed to support the Project. The Project is needed to allow Santos to exercise its lease rights to develop subsurface resources. The Project would support the economic interests of the lessee and the State of Alaska, while also contributing to regional and national energy supply. Additionally, the Project is expected to generate workforce and business development opportunities at local, state, national and international levels.

**Is any portion of the work already complete?**
No

**Description of current activity site conditions**
The area is adjacent to the existing Pikka Development and Kuparuk Unit. The sites where the access road, drill sites, and QPF are located are currently undeveloped tundra.

**Relevant Site Data, Photographs that Represent Current Site Conditions, or other Relevant Documentation**
*NONE PROVIDED*
**Comment**
*NONE PROVIDED*

**Is this a linear project? (i.e., utility line, road, etc.)**
No

**Project Address**
N/A
*[NO CITY SPECIFIED]*, AK *[NO ZIP CODE SPECIFIED]*

Visit the link below to help with conversion between DMS and Latitude/Longitude
DSM - Lat/Long converter

**Project Location**
70.295233,-150.372677

Visit the following link if you need to convert the lat/long to get the **PLSS information**
Converter for Section, Township, and Range

**PLSS Location (Public Land Survey System)**

| State Tax Parcel ID | Borough/Municipality | Meridian | Section | Township | Range |
|---|---|---|---|---|---|
| *NONE PROVIDED* | North Slope Borough | Umiat | 5, 6 | 10N | 7E |
| *NONE PROVIDED* | North Slope Borough | Umiat | 14, 23, 24 | 11N | 6E |
| *NONE PROVIDED* | North Slope Borough | Umiat | 3, 4, 9, 10, 16, 19, 21, 28, 29, 30, 32, 33 | 11N | 7E |
| *NONE PROVIDED* | North Slope Borough | Umiat | 5 | 13N | 9E |

**Directions to Site**
Santos proposes to develop hydrocarbon deposits from its Quokka Unit oil and gas leaseholds that are east of the Pikka Unit and west of the Kuparuk River Unit on the North Slope of Alaska. Surface features of the Project would be located approximately 50 miles (80.5 km) west of Deadhorse, 15 miles (24.1 km) east of the community of Nuiqsut, and 8 miles (12.9 km) east of the East Channel of the Colville River.

## Federal Agency Contact (1 of 1)

**Have you been working with anyone in the Federal Agency?**
Yes

**Federal Contact Role**
USACE

**Federal Agency Contact**

| First Name | Last Name |
|---|---|
| Janet | Post |

**Title**
North Brach Chief

**Organization Name**
US Army Corps of Engineers Alaska District

| Phone Type | Number | Extension |
|---|---|---|
| Business | 907-753-2831 | |

**Email**
Janet.L.Post@usace.army.mil

## Dredge Material to be Discharged

**Is dredging involved?**
No

# Tier Analysis

A tier analysis is comprised of a layered approach to determine the need for testing the dredge material to aid in generating physical, chemical, toxicity and bioaccumulation information, but not more information than is necessary to make factual determinations.
The tier analysis is a series of tiers (I – IV) or levels of intensity (and cost) of investigation. It is necessary to proceed through the tiers only until information is sufficient to make factual determinations, no further testing is required.

- **Tier I - Site Evaluation and History**. The initial tier (Tier I) uses readily available, existing information (including all previous testing). For certain dredge materials with readily apparent potential for environmental impact (or lack thereof), information collected in Tier I may be sufficient for making factual determinations.
- **Tier II - Chemical Testing** is concerned solely with sediment and water chemistry.
- **Tier III - Biological Testing (bioassay and/or bioaccumulation testing)** is concerned with well-defined, nationally accepte toxicity and bioaccumulation testing procedures.
- **Tier IV - Special Studies** allows for case-specific laboratory and field testing, and is intended to for use in unusual circumstances.

For more information regarding a Tier analysis, see below references

- EPA Inland Testing Manual
- USACE Seattle District Civil Works DMMP User Manual

## Fill Material to be Discharged

**Will Fill Material be Discharged?**
Yes

**For fill material, identify the material source**
Existing gravel mine site (e.g. Mine Site F, ASRC Mine Site)

**Types of material being discharged and the amount of each type (cubic yards)**

| Type | Cubic Yards |
|---|---|
| Clean gravel fill | 1,620,000 |
| Sand slurry | 57,430 |

**Surface area in (acres or linear feet) of wetlands or other waters filled**

| Surface Area | Units |
|---|---|
| 129.2 | Acres |

## Discharge Location Information (1 of 2)

**Identify the location and nature of any potential discharge that may result from the proposed project and the location of receiving waters**

**Discharge Location ID (001, 002, 003, - increment by one)**
001

NOTE: if you have a receiving water that is Wetlands, just enter the generic term "Wetlands". Do not enter "Wetlands of Tanana River", for example.

Please select 'Other' if your waterbody is not in the list below.
You can start typing the name of the waterbody to filter the list.

**Receiving Waterbody / Wetlands Name**
Wetlands

**Discharge Location**
70.295233,-150.372677

## Discharge Location Information (2 of 2)

**Identify the location and nature of any potential discharge that may result from the proposed project and the location of receiving waters**

**Discharge Location ID (001, 002, 003, - increment by one)**
002

NOTE: if you have a receiving water that is Wetlands, just enter the generic term "Wetlands". Do not enter "Wetlands of Tanana River", for example.

Please select 'Other' if your waterbody is not in the list below.
You can start typing the name of the waterbody to filter the list.

**Receiving Waterbody / Wetlands Name**
Miluveach River

**Discharge Location**
70.305214,-150.370715

## Other Pollutant Sources

### Contaminated Site Information

Determine if your project is **within 1,500 feet** of a known Alaska DEC Contaminated Site. See the *Alaska DEC Contaminated Web Map* below. This will help you to identify if any potential pollutants/parameters of concern may be present on your project site., see DEC's website:

- **Contaminated Sites Web Map**
- **Contaminated Sites Database Search website**

**Is the project within 1,500 feet of a known contaminated site?**
No

## Parameters of Concern that may be present in discharge

### Parameter(s) of Concern

Identify the parameters of concern that may be present in your discharge from the dredge and/or fill material.

Note, **TURBIDITY** and **SEDIMENT** are routine parameters associated with dredge and/or fill activities.

Consider if other parameters may be present from past activities in the area such as contamianted site data, impaired waters or other relevant water quality data, or other parameters of concern identified during the application process.

**Parameter(s)**
Turbidity
Sediment

**If known, describe respective concentrations, persistence, and potential impacts to the receiving water and data on parameters that may alter the effects of the discharge to the receiving water**
Unknown. Short-term duration from construction impacts.

### Impaired Waters

An ***impaired waterbody*** are those listed as a **Category 4 [304(b)] or Category 5 [303(d)]** in the current EPA approved *Alaska's Integrated Water Quality Monitoring and Assessment Report.*

For the most recently *Approved Integrated Water Quality Monitoring And Assessment Report (Integrated Report)*, see DEC's website:

- **Integrated Water Quality Monitoring And Assessment Report** https://dec.alaska.gov/water/water-quality/integrated-report

**Does a discharge of any parameter identified above occur to an impaired waterbody?**
No

If determined necessary and requested by the Department, submit sufficient and credible baseline water quality information for the receiving water which meets the requirements of 18 AAC 70.016(a)(6)(A-C).

## Avoidance & Minimization BMPs and Mitigation Measures

**Describe how impacts are being avoided and minimized on the project site. Include best management practices (BMPs) for sediment and erosion controls that will be implemented to minimize environmental impacts, and any methods and means proposed to monitor the discharge and the equipment or measures planned to treat, control, or manage the discharge.**

**Include a description of any methods and means proposed to monitor the discharge and the equipment or measures planned to treat, control, or manage the discharge**

Santos has incorporated, and continues to incorporate, avoidance and minimization measures into the engineering design and initial operational planning where practicable. Santos would follow standard North Slope industry best management practices (BMPs) as outlined in the Alaska Safety Handbook, North Slope Environmental Field Handbook and Alaska Department of Natural Resources (ADNR) Division of Oil and Gas (DOG) standard North Slope Areawide Mitigation Measures (2018). Additional site specific BMPs would be developed as required for specific activities, such as for Stormwater Pollution Prevention Plan (SWPPP) related discharges or where permit requirements or site conditions require a variance from standard North Slope BMPs.

**Avoidance Measures**

• The Project would use existing infrastructure to the maximum extent practicable, thereby avoiding impacts to wetlands and other waters caused by the construction of additional, duplicative facilities.
• The proposed project facilities have been sited adjacent to existing infrastructure on the North Slope, where practicable.
• The processing of production fluids from all drill sites will primarily occur at the QPF, eliminating the need for additional on-pad facilities and larger pad footprint at the drill sites.
• Seasonal ice pads and roads would be used to support winter pipeline and gravel infrastructure construction, avoiding the need for additional fill and other temporary impacts to support construction.
• Drilling for vertical support members (VSMs) would occur from an ice road, and drill cuttings would be sidecast onto the ice around each VSM and the drill cuttings will be removed once VSM installation is complete, avoiding unnecessary discharges into wetlands and other waters. The sidecasting would not change the bottom elevation of wetlands or other waters or replace any portion with dry ground.
• Where pipelines cross road embankments, pipelines would be encased in structural steel pipe casings buried within the roadway section. Casings for pipeline-road crossings would extend beyond the road embankment toe. The power and fiber optic cables would cross under the road prism via a trench located parallel to each pipeline-road crossing or would be strapped to the pipeline. Trenching would occur during winter to the extent practicable. Trenched materials would be temporarily sidecast onto an ice pad adjacent to the trench. This would avoid a discharge of fill material into wetlands or other waters. Trenched materials would be taken off the ice pad and backfilled into the excavation once trenching is complete.
• No gravel would be stockpiled in wetlands or other waters outside of the permitted footprint boundary.
• External corrosion inspections of pipelines would be conducted during winter to the extent feasible and would be supported by approved tundra travel vehicles to avoid impacts associated with summer tundra travel.
• Power cables and fiber optic cables would be installed on the HSMs using messenger cables, avoiding the need for power poles and associated fill.
• At pipeline-river crossings, all pipelines and suspended cables would be elevated to maintain adequate freeboard.

**Minimization Measures**
• All drill sites are sized to minimize overall gravel requirements while maintaining space for a sufficient number of well heads to meet the overall project purpose.

• Gravel roads would be constructed to be 32 feet wide at the surface but may be wider at curves to accommodate larger module transport. Gravel road footprints are further minimized by using 2H:1V side slopes to the extent practicable.

• Existing water access points would be used to the extent practicable, no additional gravel roads for water access would be constructed.

• Gravel infrastructure would be constructed during the winter months, when possible. All authorized fill area boundaries shall be surveyed and be clearly delineated (staked, flagged, or posted) prior to the discharge. After the gravel footprint is surveyed and staked, all snow and ice in excess of 4 inches would be removed from the tundra surface in the work area; the tundra surface would not be otherwise disturbed. Pit-run gravel would be placed in lifts using large-capacity dump trucks and would be spread out with bulldozers or similar heavy earthmoving equipment. Each lift would be compacted by a heavy roller. During summer months, ice that is present in the gravel would melt, leading to further consolidation and settlement. To enhance this process, the gravel would be farmed and re-compacted during the summer months. No infrastructure would be placed on gravel pads and roads until re-grading and compaction is completed.

• To reduce impacts from equipment, Quokka Project construction methods would use machinery and techniques to minimize wetland impacts. This includes using machines with specially designed wheels or tracks and placing mats under heavy machines to reduce surface compaction and rutting for tundra travel. All required permits would be obtained for ice road/pad construction and operation.

• If placement of the access road fill material is not completed within any winter season, sufficient openings shall be provided in the roadbed to maintain natural drainage flows and overland cross drainage at areas where overland flow is expected. Road opening widths shall be of sufficient size to prevent scour of the adjacent tundra wetlands.

• All disturbed, stockpile and fill areas shall be immediately stabilized to prevent erosion and sediment transport outside project footprint. Active sloughing of fill material, increased water turbidity, accumulation of sediment in waters and wetlands and erosion on slopes or around culverts shall be indicators fill slope stabilization is not adequate.

• Snow removal management measures would be implemented to reduce the potential for gravel fill or other contaminants to be pushed off pads during snow removal.

• Dust control measures would be implemented to reduce the incidence of dust on vegetation and snow, protect insulating vegetation and minimize dust settlement on vegetation or snow, which could increase thermal conductivity and promote earlier spring thaw in affected areas.

• Ice road and pad construction would begin after ADNR approves tundra travel and soil is considered sufficiently frozen to support the weight of equipment without damaging the underlying tundra. The ice roads would be a minimum of 6 inches thick and average approximately 12 inches thick due to terrain features. The ice roads would be constructed to support expected loads and protect the vegetation and organic soil beneath. The ice roads would be constructed to avoid sensitive vegetation, such as willows, that extend above the snow level, to the extent practicable. Ice roads would be wide enough (minimum of 20 feet) to safely accommodate two-way vehicular traffic and other traffic, as required.

• Gravel roads provide all-season access to parallel pipelines for visual inspection and for routine and emergency maintenance and repairs. This also reduces the need for tundra travel associated with these activities. Roads and pipelines would be located within 1,000 feet of each other where feasible.

• All on- and off-pad pipelines would be elevated above grade on VSMs to reduce impacts to permafrost.

• Bridge abutments would be designed using sheet piles to minimize the gravel fill footprint, road embankment erosion, and stream scour.

**Mitigation Measures**
The extremely low proportional disturbance (=0.31 percent within any watershed), the retention of intact watershed scale functions and the absence of practicable and ecologically meaningful compensatory mitigation opportunities within the watersheds indicate that compensatory mitigation would not provide environmental benefit for the Project. Consistent with the 2018 USACE/EPA Alaska MOA and the Section 404(b)(1) Guidelines, compensatory mitigation is not anticipated to be required for this Project. Avoidance and minimization measures incorporated into Project design are sufficient to satisfy mitigation sequencing requirements under the Clean Water Act.

See attached application for additional details.

## Social / Economic Importance

**Social or Economic Importance**

(18 AAC 70.016(c)(5): Provide information that demonstrates the accommodation of important social or economic development. The applicant shall complete either a social OR economic importance analysis (or both) for each affected community in the area where the receiving water for the proposed discharge is located.

**Social Importance Analysis**

*NONE PROVIDED*

**Economic Importance Analysis**

Employment, job availability, and salary impacts
Commercial activities
Access to recourses

**Describe Social and/or Economic Importance of the project**

The Project is needed to allow Santos to exercise its lease rights to develop subsurface resources. The Project would support the economic interests of the lessee and the State of Alaska, while also contributing to regional and national energy supply. Additionally, the Project is expected to generate workforce and business development opportunities at local, state, national and international levels

**Description of Social or Economic Importance, if needed**

*NONE PROVIDED*

**Comment**

*NONE PROVIDED*

## List of Other Permits or Certificates

*Would include but is not restricted to zoning, building, and flood plain permits.

**Include a list of all other federal, interstate, tribal, state, territorial, or local agency authorizations required for the proposed project, including all approvals or denials already received.**

| Agency | Type of Approval* | Identification Number | Date Applied | Date Approved | Date Denied |
|---|---|---|---|---|---|
| *NONE PROVIDED* | *NONE PROVIDED* | *NONE PROVIDED* | *NONE PROVIDED* | *NONE PROVIDED* | *NONE PROVIDED* |

## Other Agency or Local Contacts (1 of 1)

**Contact Role**

OTHER_REG_CNTCT

**Other Agency and or Local Contacts**

**First Name** Drew **Last Name** Sliger

**Title**

Project Manager, Regulatory Division

**Organization Name**

US Army Corps of Engineers

| Phone Type | Number | Extension |
|---|---|---|
| Business | 9077532723 | |

**Email**

drew.e.sliger@usace.army.mil

## Attachments

**Copy of Federal Application (USACE, EPA, or FERC, etc.)**

20260612_OUT_USACE_Santos_Quokka_DA Permit Application Package_Signed.pdf - 07/06/2026 02:49 PM
Quokka_DA_Permit_Application_ENG_Form_4345_20260501_Signed.pdf - 07/14/2026 11:44 AM

**Comment**

Included are:
- signed USACE Application for 404 permit application form
- full USACE permit application package

**Figures and/or Drawings/Plan Sets. To include a map or diagram of the proposed activity site, including the proposed activity boundaries in relation to local streets, roads, and highways.**

Figure1_QuokkaDevelopmentProjectLocation.pdf - 07/14/2026 11:39 AM
Quokka_USACE Permit Drawings_20260519.pdf - 07/14/2026 11:47 AM

**Comment**

Included:
- Project Location figure
- Permit drawings

**Document Attachments**

*NONE PROVIDED*

**Comment**

*NONE PROVIDED*

**Delegation of Authority for Submission of Application**

Quokka_Development_ADEC_401_Cert_-_Delegation.pdf - 07/14/2026 02:09 PM

**Comment**

Signed Delegation of Signatory Authority form attached

As per 18 AAC 15.030 signing of applications, all permit or approval applications must be signed as follows:
1) in the case of corporations, by a principal executive officer of at least the level of vice president or his duly authorized representative, if the representative is responsible for the overall management of the project or operation;
2) in the case of a partnership, by a general partner;
3) in the case of a sole proprietorship, by the proprietor; and
4) in the case of a municipal, state, federal or other public facility, by either a principal executive officer, ranking elected official, or other duly authorized employee.
The project proponent hereby certifies that all information contained herein is true, accurate, and complete to the best of my knowledge and belief. The project proponent hereby requests that the certifying authority review and take action on this CWA 401 certification request within the applicable reasonable period of time.

# Agreements and Signature(s)

## Certification Statement

As per 18 AAC 15.030 signing of applications, all permit or approval applications must be signed as follows:
1) in the case of corporations, by a principal executive officer of at least the level of vice president or his duly authorized representative, if the representative is responsible for the overall management of the project or operation;
2) in the case of a partnership, by a general partner;
3) in the case of a sole proprietorship, by the proprietor; and
4) in the case of a municipal, state, federal or other public facility, by either a principal executive officer, ranking elected official, or other duly authorized employee.

The project proponent hereby certifies that all information contained herein is true, accurate, and complete to the best of my knowledge and belief. The project proponent hereby requests that the certifying authority review and take action on this CWA 401 certification request within the applicable reasonable period of time.

**Signed By** Sofia Laughland on 07/22/2026 at 1:28 PM
JwZUyxiEd9q97LXA8SHyVg8aunioXNvhYgF2b5f6qLTSLRcbhDhxA25zKiAj47j9UHlitaNwElfxJAdwwTZAmA==