

## **APPENDIX K—TECHNICAL APPENDICES**

**EIS Sections and Related Technical Appendices (Appendix K)**

Chapter/Section	Technical Appendix
<b>Chapter 1: Purpose and Need</b>	No
<b>Chapter 2: Alternatives</b>	Yes
<b>Chapter 3: Affected Environment*</b>	
Section 3.1—Introduction to Affected Environment	Yes
Section 3.2—Lands	No
Section 3.3—Needs and Welfare of the People – Socioeconomics	No
Section 3.4—Environmental Justice	No
Section 3.5—Recreation	No
Section 3.6—Commercial and Recreational Fisheries	Yes
Section 3.7—Cultural Resources	Yes
Section 3.8—Historic Properties	No
Section 3.9—Subsistence	Yes
Section 3.10—Health and Safety	Yes
Section 3.11—Aesthetics	No
Section 3.12—Transportation and Navigation	Yes
Section 3.13—Geology	Yes
Section 3.14—Soils	Yes
Section 3.15—Geohazards	Yes
Section 3.16—Surface Water Hydrology	Yes
Section 3.17—Groundwater Hydrology	Yes
Section 3.18—Water and Sediment Quality	Yes
Section 3.19—Noise	No
Section 3.20—Air Quality	No
Section 3.21—Food and Fiber Production	No
Section 3.22—Wetlands and Other Waters/Special Aquatic Sites	No
Section 3.23—Wildlife Values	No
Section 3.24—Fish Values	No
Section 3.25—Threatened and Endangered Species	No
Section 3.26—Vegetation	Yes
<b>Chapter 4: Environmental Consequences*</b>	
Section 4.1—Introduction to Environmental Consequences	No
Section 4.2—Lands	No
Section 4.3—Needs and Welfare of the People—Socioeconomics	No
Section 4.4—Environmental Justice	No
Section 4.5—Recreation	No

**EIS Sections and Related Technical Appendices (Appendix K)**

<b>Chapter/Section</b>	<b>Technical Appendix</b>
Section 4.6—Commercial and Recreational Fisheries	No
Section 4.7—Cultural Resources	No
Section 4.8—Historic Properties	No
Section 4.9—Subsistence	No
Section 4.10—Health and Safety	Yes
Section 4.11—Aesthetics	Yes
Section 4.12—Transportation and Navigation	No
Section 4.13—Geology	Yes
Section 4.14—Soils	Yes
Section 4.15—Geohazards	Yes
Section 4.16—Surface Water Hydrology	Yes
Section 4.17—Groundwater Hydrology	Yes
Section 4.18—Water and Sediment Quality	Yes
Section 4.19—Noise	No
Section 4.20—Air Quality	Yes
Section 4.21—Food and Fiber Production	No
Section 4.22—Wetlands and Other Waters/Special Aquatic Sites	Yes
Section 4.23—Wildlife Values	No
Section 4.24—Fish Values	Yes
Section 4.25—Threatened and Endangered Species	Yes
Section 4.26—Vegetation	No
Section 4.27—Spill Risk	Yes
<b>Chapter 5: Mitigation</b>	No
<b>Chapter 6: Consultation And Coordination</b>	No
<b>Chapter 7: List of Preparers</b>	No
<b>Chapter 8: List of Agencies, Organizations, and Persons to Whom Copies of the Statement Have Been Sent</b>	No
<b>Chapter 9: References</b>	No

\*Chapter 3 and Chapter 4 are made up of sections 3.1 to 3.26, and 4.1 to 4.27, respectively.

## TABLE OF CONTENTS

<b>K2.0</b>	<b>ALTERNATIVES</b> .....	<b>K2-1</b>
<b>K2.1</b>	<b>ALTERNATIVE 1A</b> .....	<b>K2-1</b>
	K2.1.1 Alternative 1a Project Components Footprints .....	K2-1
	K2.1.2 Summary of Project Phases .....	K2-2
	K2.1.3 Applicant’s Proposed Construction Schedule .....	K2-3
	K2.1.4 Mining Phases, Material Type, and Volumes .....	K2-4
	K2.1.5 Mining Supplies, Processing Reagents, and Material .....	K2-4
	K2.1.6 Material Sites .....	K2-7
	K2.1.7 Water Extraction Sites .....	K2-10
	K2.1.8 Access Roads to Water Extraction Sites .....	K2-11
<b>K2.2</b>	<b>ALTERNATIVE 1</b> .....	<b>K2-11</b>
	K2.2.1 Alternative 1 Project Components Footprints .....	K2-11
	K2.2.2 Material Sites .....	K2-16
	K2.2.3 Water Extraction Sites .....	K2-20
	K2.2.4 Access Roads to Water Extraction Sites .....	K2-22
<b>K2.3</b>	<b>ALTERNATIVE 2—NORTH ROAD AND FERRY WITH DOWNSTREAM DAMS</b> .....	<b>K2-22</b>
	K2.3.1 Alternative 2 Project Components Footprints .....	K2-22
	K2.3.2 Material Sites .....	K2-27
	K2.3.3 Access Roads to Water Extraction Sites .....	K2-33
<b>K2.4</b>	<b>ALTERNATIVE 3—NORTH ROAD ONLY</b> .....	<b>K2-33</b>
	K2.4.1 Alternative 3 Project Components Footprints .....	K2-33
	K2.4.2 Material Sites .....	K2-36
	K2.4.3 Water Extraction Sites .....	K2-38
	K2.4.4 Access Roads to Water Extraction Sites .....	K2-40
<b>K3.1</b>	<b>INTRODUCTION TO AFFECTED ENVIRONMENT</b> .....	<b>K3.1-1</b>
	K3.1.1 Scoping Comments.....	K3.1-1
	K3.1.2 Draft Environmental Impact Statement Comments .....	K3.1-5
	K3.1.3 Existing Documents .....	K3.1-6
	K3.1.3.1 Environmental Protection Agency Watershed Study.....	K3.1-6
	K3.1.3.2 Other Reports .....	K3.1-8
	K3.1.4 Cooperating Agencies.....	K3.1-8
	K3.1.5 Government-to-Government Tribal Consultation.....	K3.1-9
	K3.1.6 National Historic Properties Act Section 106 Consultation .....	K3.1-9
<b>K3.6</b>	<b>COMMERCIAL AND RECREATIONAL FISHERIES</b> .....	<b>K3.6-1</b>
	K3.6.1 Commercial Fisheries Data.....	K3.6-1
	K3.6.2 Area N, P, S, and T Freshwater Guide Logbook Data.....	K3.6-4
<b>K3.7</b>	<b>CULTURAL RESOURCES</b> .....	<b>K3.7-1</b>
	K3.7.1 Alaska Heritage Resource Survey (AHRS) Sites .....	K3.7-1
	K3.7.2 Place Names.....	K3.7-17
	K3.7.3 Interview-Identified Cultural Resources .....	K3.7-22
<b>K3.9</b>	<b>SUBSISTENCE</b> .....	<b>K3.9-1</b>
	K3.9.1 Port Alsworth.....	K3.9-11

K3.9.2	Koliganek .....	K3.9-12
K3.9.3	Levelock .....	K3.9-13
K3.9.4	New Stuyahok .....	K3.9-14
K3.9.5	King Salmon .....	K3.9-15
K3.9.6	Naknek .....	K3.9-16
K3.9.7	South Naknek .....	K3.9-17
K3.9.8	Aleknagik .....	K3.9-25
K3.9.9	Clark’s Point .....	K3.9-26
K3.9.10	Manokotak .....	K3.9-27
K3.9.11	Dillingham .....	K3.9-28
K3.9.12	Ninilchik .....	K3.9-29
K3.9.13	Seldovia .....	K3.9-30
<b>K3.10</b>	<b>HEALTH AND SAFETY .....</b>	<b>K3.10-1</b>
K3.10.1	HEC 1: Social Determinants of Health .....	K3.10-1
K3.10.2	HEC 2: Accidents and Injuries .....	K3.10-3
K3.10.3	HEC 3: Exposure to Potentially Hazardous Materials .....	K3.10-3
K3.10.4	HEC 4: Food, Nutrition, and Subsistence Activity .....	K3.10-5
K3.10.5	HEC 5: Infectious Diseases .....	K3.10-5
K3.10.6	HEC 6: Water and Sanitation .....	K3.10-7
K3.10.7	HEC 7: Non-Communicable and Chronic Diseases .....	K3.10-8
K3.10.8	HEC 8: Health and Safety Services Infrastructure and Capacity .....	K3.10-10
<b>K3.12</b>	<b>TRANSPORTATION AND NAVIGATION .....</b>	<b>K3.12-1</b>
K3.12.1	Existing Flight Paths and Shipping Routes .....	K3.12-1
<b>K3.13</b>	<b>GEOLOGY .....</b>	<b>K3.13-1</b>
K3.13.1	Geology-Related Field and Desktop Studies .....	K3.13-1
K3.13.2	Paleontological Resources .....	K3.13-2
K3.13.2.1	Alternative 1a .....	K3.13-2
K3.13.2.2	Alternative 1 .....	K3.13-3
K3.13.2.3	Alternative 2—North Road and Ferry with Downstream Dam and Alternative 3—North Road Only .....	3.13-4
<b>K3.14</b>	<b>SOILS .....</b>	<b>K3.14-1</b>
K3.14.1	Project Footprint Soil Classification .....	K3.14-1
K3.14.1.1	Mine Site Soil Types .....	K3.14-1
K3.14.1.2	Transportation Corridor Soil Types .....	K3.14-3
K3.14.1.3	Pipeline Corridor Soil Types .....	K3.14-4
K3.14.1.4	Soil Types Unique to Alternatives .....	K3.14-4
K3.14.2	Permafrost Occurrence .....	K3.14-5
K3.14.3	Baseline Soil Chemistry .....	K3.14-5
K3.14.3.1	Mine Site .....	K3.14-5
K3.14.3.2	Transportation Corridor .....	K3.14-12
<b>K3.15</b>	<b>GEOHAZARDS AND SEISMIC CONDITIONS .....</b>	<b>K3.15-1</b>
K3.15.1	Liquefaction .....	K3.15-1
K3.15.2	Baseline Geotechnical Data Coverage .....	K3.15-1
<b>K3.16</b>	<b>SURFACE WATER HYDROLOGY .....</b>	<b>K3.16-1</b>
K3.16.1	Streamflow Measurements in Mine Study Area (All Alternatives) .....	K3.16-1
K3.16.2	Flood Peak Flows in Mine Study Area (All Alternatives) .....	K3.16-8
K3.16.3	Alternative 2—Streamflow Measurements and Peak Flow Estimates .....	K3.16-8

K3.16.4	Baseline Watershed Model .....	K3.16-15
K3.16.4.1	Meteorological Data Inputs .....	K3.16-15
K3.16.4.2	Temperature .....	K3.16-22
K3.16.4.3	Precipitation .....	K3.16-22
K3.16.4.4	Climate Water Balance .....	K3.16-24
K3.16.4.5	Snow and Rain .....	K3.16-24
K3.16.4.6	Potential Evapotranspiration .....	K3.16-25
K3.16.4.7	Actual Evapotranspiration .....	K3.16-25
K3.16.4.8	Soil Water .....	K3.16-26
K3.16.4.9	Water Available for Groundwater Recharge and Surface Water Runoff .....	K3.16-27
K3.16.4.10	Sub-Catchment Flow Distribution .....	K3.16-27
K3.16.4.11	Groundwater Recharge .....	K3.16-27
K3.16.4.12	Groundwater Storage and Discharge .....	K3.16-27
K3.16.5	Baseline Watershed Model Description .....	K3.16-28
K3.16.6	Watershed Model Calibration and Validation .....	K3.16-29
K3.16.6.1	Calibration .....	K3.16-30
K3.16.6.2	Validation .....	K3.16-33
K3.16.6.3	Long-Term Streamflows .....	K3.16-34
K3.16.7	Long-Term Climate Change .....	K3.16-40
K3.16.7.1	Temperature .....	K3.16-40
K3.16.7.2	Precipitation .....	K3.16-41
K3.16.7.3	Streamflow .....	K3.16-42
<b>K3.17</b>	<b>GROUNDWATER HYDROLOGY .....</b>	<b>3.17-1</b>
K3.17.1	Groundwater Investigation Programs .....	3.17-1
K3.17.2	Aquifers, Confining Units, and Groundwater Flow Systems .....	3.17-8
K3.17.3	Aquifer Properties—Hydraulic Conductivity and Storativity .....	3.17-25
K3.17.4	Groundwater Flow Seasonality .....	3.17-31
K3.17.5	Site Water Balance Model .....	3.17-32
K3.17.6	Mine Site Groundwater Model .....	3.17-32
<b>K3.18</b>	<b>WATER AND SEDIMENT QUALITY .....</b>	<b>K3.18-1</b>
K3.18.1	Criteria .....	K3.18-1
K3.18.1.1	Surface Water Quality Criteria .....	K3.18-1
K3.18.1.2	Groundwater Quality Criteria .....	K3.18-4
K3.18.1.3	Sediment Quality Criteria .....	K3.18-4
K3.18.2	Geochemistry .....	K3.18-5
K3.18.2.1	Waste Rock Geochemical Characteristics .....	K3.18-5
K3.18.2.2	Tailings and Supernatant Geochemical Characteristics .....	K3.18-16
K3.18.2.3	Construction Rockfill Geochemical Characteristics .....	K3.18-17
K3.18.2.4	Open Pit Block Model .....	K3.18-21
K3.18.3	Surface Water Quality .....	K3.18-22
K3.18.3.1	Data Tables .....	K3.18-22
K3.18.3.2	Trend Analysis at Mine Site .....	K3.18-46
K3.18.3.3	Cook Inlet: Iliamna/Iniskin Estuary .....	K3.18-50
K3.18.4	Groundwater Quality .....	K3.18-51
K3.18.5	Sediment Quality .....	K3.18-51
<b>K3.26</b>	<b>VEGETATION .....</b>	<b>K3.26-1</b>
<b>K4.10</b>	<b>HEALTH AND SAFETY .....</b>	<b>K4.10-1</b>
K4.10.1	No Action Alternative .....	K4.10-5
K4.10.2	Alternative 1a .....	K4.10-6
K4.10.2.1	HEC 1: Social Determinants of Health .....	K4.10-6
K4.10.2.2	HEC 2: Accidents and Injuries .....	K4.10-12
K4.10.2.3	HEC 3: Exposure to Potentially Hazardous Materials .....	K4.10-15

K4.10.2.4 HEC 4: Food, Nutrition, and Subsistence Activity .....	K4.10-40
K4.10.2.5 HEC 5: Infectious Diseases .....	K4.10-43
K4.10.2.6 HEC 6: Water and Sanitation .....	K4.10-47
K4.10.2.7 HEC 7: Non-Communicable and Chronic Diseases .....	K4.10-49
K4.10.2.8 HEC 8: Health and Safety Services Infrastructure and Capacity .....	K4.10-52
K4.10.3 Alternative 1 .....	K4.10-56
K4.10.4 Alternative 2—North Road and Ferry with Downstream Dams .....	K4.10-57
K4.10.5 Alternative 3—North Road Only .....	K4.10-57
<b>K4.11 AESTHETICS .....</b>	<b>K4.11-1</b>
<b>K4.13 GEOLOGY .....</b>	<b>K4.13-1</b>
K4.13.1 Paleontological Resources .....	K4.13-1
K4.13.1.1 Alternative 1a .....	K4.13-1
K4.13.1.2 Alternative 1 .....	K4.13-2
K4.13.1.3 Alternative 1—Summer-Only Ferry Operations Variant .....	K4.13-2
K4.13.1.4 Alternative 1—Kokhanok East Ferry Terminal .....	K4.13-2
K4.13.1.5 Alternative 1—Pile-Supported Dock Variant .....	K4.13-3
K4.13.1.6 Alternative 2—North Road and Ferry with Downstream Dams, and Alternative 3—North Road Only .....	K4.13-3
<b>K4.14 SOILS .....</b>	<b>K4.14-1</b>
<b>K4.15 GEOHAZARDS AND SEISMIC CONDITIONS .....</b>	<b>K4.15-1</b>
K4.15.1 Mine Site .....	K4.15-1
K4.15.1.1 Overview of Mine Embankments and Impoundments .....	K4.15-1
K4.15.1.2 Embankment Construction Materials .....	K4.15-1
K4.15.1.3 Design and Construction of Embankments and Impoundments .....	K4.15-8
K4.15.1.4 Seepage Analysis .....	K4.15-21
K4.15.1.5 Stability Analysis .....	K4.15-25
K4.15.1.6 Analysis of Open Pit Wall Stability .....	K4.15-56
K4.15.2 Port Sites .....	K4.15-67
K4.15.2.1 Probabilistic Seismic Hazard Analysis .....	K4.15-67
K4.15.2.2 Deterministic Seismic Hazard Analysis .....	K4.15-69
K4.15.2.3 Foundation Conditions at Port Sites .....	K4.15-71
K4.15.2.4 Stability of Sheet Pile Dock .....	K4.15-71
<b>K4.16 SURFACE WATER HYDROLOGY .....</b>	<b>K4.16-1</b>
K4.16.1 Streamflow Change .....	K4.16-1
<b>K4.16.1.1</b> Description of the Evaluation .....	K4.16-1
<b>K4.16.1.2</b> Results .....	K4.16-2
<b>K4.16.1.3</b> Additional Considerations .....	K4.16-23
<b>K4.16.1.4</b> Uncertainty .....	K4.16-24
<b>K4.17 GROUNDWATER HYDROLOGY .....</b>	<b>K4.17-1</b>
K4.17.1 Model Development, Calibration, Input Scenarios, and Uncertainty .....	K4.17-1
K4.17.2 Pit Zone of Influence .....	K4.17-3
K4.17.2.1 Operations .....	K4.17-3
K4.17.2.2 Closure and Post-Closure .....	K4.17-3
K4.17.3 Seepage from Tailings Storage Facilities and Main Water Management Pond .....	K4.17-12
<b>K4.18 WATER AND SEDIMENT QUALITY .....</b>	<b>K4.18-1</b>
K4.18.1 Water Quality Modeling .....	K4.18-1
K4.18.1.1 Operations .....	K4.18-1
K4.18.1.2 Closure and Post-Closure .....	K4.18-19
K4.18.2 Water Treatment .....	K4.18-42
K4.18.2.1 Open Pit Water Treatment Plant (WTP #1)—Operations .....	K4.18-45

K4.18.2.2 Main Water Treatment Plant (WTP #2)—Operations and Closure Phase 1.....	K4.18-46
K4.18.2.3 Closure Water Treatment Plant (WTP #3)—Closure Phase 1 .....	K4.18-47
K4.18.2.4 Closure Water Treatment Plant (WTP #3)—Closure Phase 3 and Phase 4 .....	K4.18-48
K4.18.2.5 Review of WTP Methodologies .....	K4.18-49
K4.18.2.6 Water Quality of WTP Discharge .....	K4.18-50
K4.18.2.7 Water Treatment at Marine Port.....	K4.18-53
K4.18.3 Dust Deposition Methodologies .....	K4.18-53
K4.18.3.1 Sediment/Substrate Quality .....	K4.18-60
K4.18.3.2 Surface Water Quality.....	K4.18-60
K4.18.3.3 Groundwater Quality .....	K4.18-69
K4.18.4 Environmental Mass Loading.....	K4.18-70
K4.18.5 Effluent Downstream Mixing .....	K4.18-71
<b>K4.20 AIR QUALITY.....</b>	<b>K4.20-1</b>
K4.20.1 Emission Inventory and Project Emissions Summary .....	K4.20-1
K4.20.1.1 Emission Inventory Development Methodology .....	K4.20-1
K4.20.1.2 Calculated Emission Inventory for Direct Impacts.....	K4.20-1
K4.20.2 Model-Predicted Direct Impacts.....	K4.20-10
K4.20.2.1 Comparison of Model-Predicted Direct Impacts to Applicable Thresholds .....	K4.20-10
K4.20.2.2 Discussion of Model-Predicted Criteria Pollutant Impacts for the Representative Project Components.....	K4.20-14
K4.20.3 Discussion of Cumulative Impact Analysis for the Representative Project .....	K4.20-25
K4.20.3.1 Pebble Project Ambient Ozone .....	K4.20-26
<b>K4.22 WETLANDS AND OTHER WATERS/SPECIAL AQUATIC SITES .....</b>	<b>K4.22-1</b>
4.22.1 Wetlands and Other Waters Map Series .....	K4.22-1
<b>K4.24 FISH VALUES .....</b>	<b>K4.24-1</b>
K4.24.1 Selenium .....	K4.24-1
K4.24.1.1 Selenium Impacts to Aquatic Species and Wildlife .....	K4.24-2
K4.24.2 Copper .....	K4.24-3
K4.24.2.1 Copper Impacts to Aquatic Species and Wildlife.....	K4.24-4
K4.24.3 Cadmium.....	K4.24-5
K4.24.4 Mercury .....	K4.24-5
K4.24.4.1 Mercury Impacts to Aquatic Species and Wildlife .....	K4.24-6
K4.24.4.2 Sulfate Loading and Mercury Methylation .....	K4.24-7
K4.24.5 Other Major Ions .....	K4.24-12
K4.24.6 Development and Application of the Instream Flow Fish Habitat Modeling.....	K4.24-12
K4.24.6.1 Instream Flow Methodology .....	K4.24-12
K4.24.6.2 Derivation of Daily Flows .....	K4.24-13
K4.24.6.3 Instream Flow Modeling Results .....	K4.24-14
<b>K4.25 THREATENED AND ENDANGERED SPECIES .....</b>	<b>K4.25-1</b>
K4.25.1 Overview of Marine Mammal Acoustics.....	K4.25-1
K4.25.1.1 Underwater Noise Descriptors .....	K4.25-1
K4.25.1.2 Applicable Noise Criteria.....	K4.25-2
K4.25.1.3 Description of Sound Sources.....	K4.25-3
K4.25.1.4 Effects of Noise on Affected Marine Mammals .....	K4.25-6
K4.25.1.5 Hearing Abilities of Affected Marine Mammals.....	K4.25-8
K4.25.1.6 Potential Effects of Project-Induced Noise on Marine Mammals.....	K4.25-10
K4.25.1.7 Potential Impacts of Noise on Food Sources .....	K4.25-14



K4.25.1.8 Acoustic Analysis .....	K4.25-16
<b>K4.27 SPILL RISK .....</b>	<b>K4.27-1</b>
K4.27.1 Purpose .....	K4.27-1
K4.27.1.1 Historic Tailings Dam Failures .....	K4.27-1
K4.27.1.2 The Industry Call for Water Reduction in Tailings Storage Facilities.....	K4.27-3
K4.27.2 Applicant’s Bulk Tailings Storage Facility Design .....	K4.27-4
K4.27.2.1 Separate Bulk and Pyritic Tailings Storage Facilities .....	K4.27-5
K4.27.2.2 Embankment Foundations on Bedrock, not on Overburden .....	K4.27-5
K4.27.2.3 Centerline and Downstream Dams versus Upstream Dams .....	K4.27-5
K4.27.2.4 Tailings Viscosity: Use of Thickened Tailings versus Slurry Tailings .....	K4.27-6
K4.27.2.5 Minimizing Surface Water in the Tailings Storage Facility, and “Promoting Unsaturated Conditions” in Tailings .....	K4.27-7
K4.27.2.6 Very High Capacity Water Storage in Main WMP .....	K4.27-10
K4.27.2.7 Dry Closure and Post-Closure .....	K4.27-10
K4.27.2.8 Failure Modes and Effects Analysis Risk Assessment.....	K4.27-10
K4.27.3 Examples of Four Recent Dam Failures .....	K4.27-11
K4.27.3.1 Mount Polley Failure, British Columbia, Canada 2014 .....	K4.27-11
K4.27.3.2 Fundão Failure, Minas Gerais, Brazil 2015 .....	K4.27-12
K4.27.3.3 Feijão Failure, Minas Gerais, Brazil 2019 .....	K4.27-13
K4.27.3.4 Cadia Failure, New South Wales, Australia 2018 .....	K4.27-14
K4.27.4 Tailings Dam Failure Modeling .....	K4.27-15
K4.27.4.1 EPA Model .....	K4.27-16
K4.27.4.2 Lynker Model .....	K4.27-19
K4.27.4.3 Model Discussion .....	K4.27-21

## LIST OF FIGURES

Figure K2-1: Alternative 1a—Material Sites and Water Extraction Sites—Mine Access Road .....	K2-8
Figure K2-2: Alternative 1a—Material Sites and Water Extraction Sites—Port Access Road .....	K2-9
Figure K2-3: Alternative 1—Material Sites and Water Extraction Sites—Mine Access Road .....	K2-17
Figure K2-4: Alternative 1—Material Sites and Water Extraction Sites—Port Access Road .....	K2-18
Figure K2-5: Alternative 2—Material Sites and Water Extraction Sites—Mine Access Road .....	K2-29
Figure K2-6: Alternative 2—Material Sites and Water Extraction Sites—Port Access Road .....	K2-30
Figure K2-7: Alternative 3—Material Sites and Water Extraction Sites—North Access Road....	K2-37
Figure K3.6-1: Inshore Average Sockeye Salmon Run by River System, 1998-2017, Naknek-Kvichak District .....	K3.6-2
Figure K3.6-2: Inshore Average Sockeye Salmon Run by River System, 2000-2019, Nushagak District .....	K3.6-3
Figure K3.9-1: Large Land Mammal Harvest Areas—Iliamna, Newhalen, Pedro Bay, Nondalton, Igiugig, and Kokhanok .....	K3.9-4
Figure K3.9-2: Salmon Harvest Areas—Iliamna, Newhalen, Pedro Bay, Nondalton, Igiugig, and Kokhanok .....	K3.9-5
Figure K3.9-3: Non-Salmon Harvest Areas—Iliamna, Newhalen, Pedro Bay, Nondalton, Igiugig, and Kokhanok .....	K3.9-6
Figure K3.9-4: Vegetation (Plants, Wood, Berries, Fungi) Harvest Areas—Iliamna, Newhalen, Pedro Bay, Nondalton, Igiugig, and Kokhanok .....	K3.9-7
Figure K3.9-5: Marine Mammal and Marine Invertebrate Harvest Areas—Iliamna, Newhalen, Pedro Bay, Nondalton, Igiugig, and Kokhanok .....	K3.9-8
Figure K3.9-6: Avian Harvest Areas—Iliamna, Newhalen, Pedro Bay, Nondalton, Igiugig, and Kokhanok .....	K3.9-9
Figure K3.9-7: Small Land Mammal Harvest Areas—Iliamna, Newhalen, Pedro Bay, Nondalton, Igiugig, and Kokhanok .....	K3.9-10
Figure K3.9-8: Composition of Port Alsworth Subsistence Harvest by Estimated Edible Weight, 2004.....	K3.9-11
Figure K3.9-9: Composition of Koliganek Subsistence Harvest by Estimated Edible Weight, 2005.....	K3.9-12
Figure K3.9-10: Composition of Levelock Subsistence Harvest by Estimated Edible Weight, 2005.....	K3.9-13
Figure K3.9-11: Composition of New Stuyahok Subsistence Harvest by Estimated Edible Weight, 2005.....	K3.9-14
Figure K3.9-12: Composition of King Salmon Subsistence Harvest by Estimated Edible Weight, 2007.....	K3.9-15
Figure K3.9-13: Composition of Naknek Subsistence Harvest by Estimated Edible Weight, 2007.....	K3.9-16
Figure K3.9-14: Composition of South Naknek Subsistence Harvest by Estimated Edible Weight, 2007.....	K3.9-17
Figure K3.9-15: Large Land Mammal Harvest Areas—Koliganek, Levelock, New Stuyahok, King Salmon, Naknek, and South Naknek .....	K3.9-18
Figure K3.9-16: Salmon Harvest Areas—Koliganek, Levelock, New Stuyahok, King Salmon, Naknek, and South Naknek .....	K3.9-19
Figure K3.9-17: Non-Salmon Harvest Areas—Koliganek, Levelock, New Stuyahok, King Salmon, Naknek, and South Naknek .....	K3.9-20
Figure K3.9-18: Vegetation (Plants, Wood, Berries, Fungi) Harvest Areas—Koliganek, Levelock, New Stuyahok, King Salmon, Naknek, and South Naknek.....	K3.9-21

**Figure K3.9-19: Marine Mammal and Marine Invertebrate Harvest Areas—Koliganek, Levelock, New Stuyahok, King Salmon, Naknek, and South Naknek..... K3.9-22**

**Figure K3.9-20: Avian Harvest Areas—Koliganek, Levelock, New Stuyahok, King Salmon, Naknek, and South Naknek ..... K3.9-23**

**Figure K3.9-21: Small Land Mammal Harvest Areas—Koliganek, Levelock, New Stuyahok, King Salmon, Naknek, and South Naknek ..... K3.9-24**

**Figure K3.9-22: Composition of Aleknagik Subsistence Harvest by Estimated Edible Weight, 2008..... K3.9-25**

**Figure K3.9-23: Composition of Clark’s Point Subsistence Harvest by Estimated Edible Weight, 2008..... K3.9-26**

**Figure K3.9-24: Composition of Manokotak Subsistence Harvest by Estimated Edible Weight, 2008..... K3.9-27**

**Figure K3.9-25: Composition of Dillingham Subsistence Harvest by Estimated Edible Weight, 2010..... K3.9-28**

**Figure K3.9-26: Composition of Ninilchik Subsistence Harvest by Estimated Edible Weight, 1998..... K3.9-29**

**Figure K3.9-27: Composition of Seldovia Subsistence Harvest by Estimated Edible Weight, 2014..... K3.9-30**

**Figure K3.9-28: Large Land Mammal Harvest Areas—Aleknagik, Clark’s Point, Manokotak, Dillingham, and Seldovia ..... K3.9-31**

**Figure K3.9-29: Salmon Harvest Areas—Aleknagik, Clark’s Point, Manokotak, Dillingham, and Seldovia ..... K3.9-32**

**Figure K3.9-30: Non-Salmon Harvest Areas—Aleknagik, Clark’s Point, Manokotak, Dillingham, and Seldovia ..... K3.9-33**

**Figure K3.9-31: Vegetation (Plants, Wood, Berries, Fungi) Harvest Areas—Aleknagik, Clark’s Point, Manokotak, Dillingham, and Seldovia ..... K3.9-34**

**Figure K3.9-32: Marine Mammal and Marine Invertebrate Harvest Areas—Aleknagik, Clark’s Point, Manokotak, Dillingham, and Seldovia ..... K3.9-35**

**Figure K3.9-33: Avian Harvest Areas—Aleknagik, Clark’s Point, Manokotak, Dillingham, and Seldovia ..... K3.9-36**

**Figure K3.9-34: Small Land Mammal Harvest Areas—Aleknagik, Clark’s Point, Manokotak, Dillingham, and Seldovia ..... K3.9-37**

**Figure K3.12-1: Flight Paths..... K3.12-4**

**Figure K3.12-2: Shipping Routes ..... K3.12-5**

**Figure K3.16-1 Meteorological Monitoring Stations in the Mine Study Area..... K3.16-17**

**Figure K3.16-2 Baseline Watershed Model Sub-Catchment Boundaries and Simulated Flow Regime ..... K3.16-18**

**Figure K3.16-3 Baseline Watershed Model Elevation Bands ..... K3.16-19**

**Figure K3.16-4: Water Balance Components ..... K3.16-29**

**Figure K3.17-1a: Well, Piezometer, and Seep Locations—Map Index..... 3.17-2**

**Figure K3.17-1b: Well, Piezometer, and Seep Locations—NFK Drainage ..... 3.17-3**

**Figure K3.17-1c: Well, Piezometer, and Seep Locations—UTC Drainage North ..... 3.17-4**

**Figure K3.17-1d: Well, Piezometer, and Seep Locations—Lower SFK Drainage ..... 3.17-5**

**Figure K3.17-1e: Well, Piezometer, and Seep Locations—Upper SFK and UTC South Drainages ..... 3.17-6**

**Figure K3.17-2: Vertical Gradients between Shallow Overburden and Deep Overburden during Seasonal Low ..... 3.17-14**

**Figure K3.17-3: Vertical Gradients between Shallow Overburden and Deep Overburden during Seasonal High..... 3.17-15**

**Figure K3.17-4: Vertical Gradients between Shallow Overburden and Bedrock during Seasonal Low**..... 3.17-16

**Figure K3.17-5: Vertical Gradients between Shallow Overburden and Bedrock during Seasonal High**..... 3.17-17

**Figure K3.17-6: Vertical Direction of Groundwater Flow** ..... 3.17-18

**Figure K3.17-7: Hydraulic Conductivity: Model Layer 1** ..... 3.17-22

**Figure K3.17-8: Hydraulic Conductivity: Model Layer 2** ..... 3.17-23

**Figure K3.17-9: Hydraulic Conductivity: Model Layer 3** ..... 3.17-24

**Figure K3.17-10: Cumulative Frequency of Hydraulic Conductivity Measurements from Pumping and Response Tests** ..... 3.17-26

**Figure K3.17-11: Hydraulic Conductivity in Bedrock versus Depth in Pebble Deposit Area from Packer Tests** ..... 3.17-27

**Figure K3.17-12: Hydraulic Conductivity in Bedrock versus Depth Outside the Pebble Deposit Area from Packer Tests** ..... 3.17-28

**Figure K3.17-13: Hydraulic Conductivity Profile for Deep Bedrock** ..... 3.17-29

**Figure K3.17-14: Hydraulic Conductivity Estimates with Depth: All Testing Data Combined** ..... 3.17-30

**Figure K3.17-15: Time Series of Piezometric Elevations, South Fork Kaktuli Flats Area, 2004-2009** ..... 3.17-35

**Figure K3.17-16: Time Series of Piezometric Elevations, Pebble Deposit Area, 2004-2009** ..... 3.17-36

**Figure K3.17-17: Groundwater Model Grid**..... 3.17-37

**Figure K3.17-18: Model-Assigned Hydrogeologic Units along Surficial Geology Cross-Section E8**..... 3.17-38

**Figure K3.18-1: Geochemical Characterization—Representative Sample Distribution** ..... K3.18-6

**Figure K3.18-2: NP Plotted as Function of AP for Tailings**..... K3.18-18

**Figure K4.10-1: Mine Site Conceptual Site Model** ..... K4.10-17

**Figure K4.10-2: Transportation Corridor, Amakdedori Port, and Natural Gas Pipeline Conceptual Site Model**..... K4.10-18

**Figure K4.11-1: TSF Main Embankment Viewshed Analysis**..... K4.11-2

**Figure K4.11-2: TSF South Embankment Viewshed Analysis**..... K4.11-3

**Figure K4.11-3: Course Ore Stockpile Viewshed Analysis**..... K4.11-4

**Figure K4.11-4: Alternative 1a and Alternative 2 Eagle Bay Ferry Terminal Viewshed Analysis**..... K4.11-5

**Figure K4.11-5: Alternative 1a and Alternative 1 South Ferry Terminal Viewshed Analysis** ... K4.11-6

**Figure K4.11-6: Alternative 1a and Alternative 1 Amakdedori Port Viewshed Analysis** ..... K4.11-7

**Figure K4.11-7: Alternative 1a and Alternative 2 Mine Access Road Viewshed Analysis**..... K4.11-8

**Figure K4.11-8: Alternative 1a and Alternative 1 Port Access Road Viewshed Analysis**..... K4.11-9

**Figure K4.11-9: Alternative 1 North Ferry Terminal Viewshed Analysis** ..... K4.11-10

**Figure K4.11-10: Alternative 1 Mine Access Road Viewshed Analysis**..... K4.11-11

**Figure K4.11-11: Alternative 2 Pile Bay Ferry Terminal Viewshed Analysis**..... K4.11-12

**Figure K4.11-12: Alternative 2 Diamond Point Port Viewshed Analysis** ..... K4.11-13

**Figure K4.11-13: Alternative 3 Diamond Point Port Viewshed Analysis** ..... K4.11-14

**Figure K4.11-14: Alternative 3 North Access Road Viewshed Analysis** ..... K4.11-15

**Figure K4.11-15: Kenai Compressor Station Viewshed Analysis** ..... K4.11-16

**Figure K4.11-16: Simulation—KOP: Roadhouse Mountain West Toward Mine Site Alternative 1a, Alternative 2, and Alternative 3** ..... K4.11-17

**Figure K4.11-17: Simulation—KOP: Newhalen River Northwest Toward Mine Site All Alternatives ..... K4.11-18**

**Figure K4.11-18: Simulation—KOP: Iliamna Lake West, North Toward North Ferry Terminal Alternative 1 ..... K4.11-19**

**Figure K4.11-19: Simulation—KOP: Iliamna Lake East, South Toward South Ferry Terminal Alternative 1a and Alternative 1 ..... K4.11-20**

**Figure K4.11-20: Simulation—KOP: Big Mountain East Toward South Ferry Terminal Alternative 1a and Alternative 1 ..... K4.11-21**

**Figure K4.11-21: Simulation—KOP: McNeil River Base Camp North Toward Amakdedori Alternative 1a and Alternative 1 ..... K4.11-22**

**Figure K4.11-22: Simulation—KOP: Gibraltar River West Toward South Ferry Terminal Alternative 1a and Alternative 1 ..... K4.11-23**

**Figure K4.15-1: Quarries A through C Cross-Sections—Typical..... K4.15-4**

**Figure K4.15-2: Bulk Tailings Grain Size Distribution..... K4.15-23**

**Figure K4.15-3: Bulk TSF Seepage Model ..... K4.15-26**

**Figure K4.15-4: Bulk TSF Main Embankment Static Stability Analysis—Buttressed Centerline Construction..... K4.15-31**

**Figure K4.15-5: Bulk TSF South Embankment Static Stability Analysis..... K4.15-32**

**Figure K4.15-6: Pyritic TSF North Embankment Static Stability Analysis ..... K4.15-33**

**Figure K4.15-7: Main WMP Static Stability Analysis ..... K4.15-35**

**Figure K4.15-8: Open Pit WMP Static Stability Analysis..... K4.15-36**

**Figure K4.15-9: Bulk TSF SCP Static Stability Analysis ..... K4.15-37**

**Figure K4.15-10: Seismicity and Earthquake Depth ..... K4.15-40**

**Figure K4.15-11: Cross-Section through Alaska Subduction Zone..... K4.15-41**

**Figure K4.15-12: Deterministic Response Spectra for TSF Maximum Design Earthquake Scenarios ..... K4.15-48**

**Figure K4.15-13: Open Pit Topographic Cross-Section..... K4.15-57**

**Figure K4.15-14: Geotechnical Domains and Pit Wall Stability Sections ..... K4.15-58**

**Figure K4.15-15: Water Table Scenarios Examined in Pit Wall Stability Analysis ..... K4.15-60**

**Figure K4.15-16: Pit Wall Stability Section A—Scenario with Active Drains in Early Closure ..... K4.15-62**

**Figure K4.15-17: Pit Wall Stability Section A—Scenario with Half-Full Pit Lake..... K4.15-63**

**Figure K4.15-18: Pit Wall Stability Sensitivity Analysis—Reduction in Rock Strength Parameters ..... K4.15-65**

**Figure K4.15-19: Area of Influence of Fault on Section A Pit Wall Instability..... K4.15-66**

**Figure K4.15-20: Maximum Wave Amplitudes for Earthquake-Induced Landslides into Pit Lake ..... K4.15-68**

**Figure K4.16-1: Water Balance Flow Schematic—End of Mine ..... K4.16-26**

**Figure K4.16-2: Water Balance Flow Schematic, Closure—Phase 1 ..... K4.16-27**

**Figure K4.16-3: Water Balance Flow Schematic, Closure—Phase 2 ..... K4.16-28**

**Figure K4.16-4: Water Balance Flow Schematic, Closure—Phase 3 ..... K4.16-29**

**Figure K4.16-5: Water Balance Flow Schematic, Closure—Phase 4 (Post-Closure) ..... K4.16-30**

**Figure K4.16-6: North Fork Koktuli River Reaches and Hydrology Stations ..... K4.16-31**

**Figure K4.16-7: South Fork Koktuli River Reaches and Hydrology Stations ..... K4.16-32**

**Figure K4.16-8: Upper Talarik Creek Reaches and Hydrology Stations ..... K4.16-33**

**Figure K4.17-1: Scenario S8 (Low K) End-of-Mining Simulated Drawdown and Mounding: Water Table ..... K4.17-6**

**Figure K4.17-2: Scenario S7 (High K) End-of-Mining Simulated Drawdown and Mounding:  
 Water Table ..... K4.17-7**

**Figure K4.17-3: Scenario S8 (Low K) Post-Closure Simulated Drawdown and Mounding:  
 Water Table ..... K4.17-9**

**Figure K4.17-4: Scenario S7 (High K) Post-Closure Simulated Drawdown and Mounding:  
 Water Table ..... K4.17-10**

**Figure K4.17-5: Simulated Groundwater Seepage (Outflow) and Groundwater Discharge  
 (Inflow) from/to the Pit Lake under various Pit Lake Elevation Assumptions for the  
 S15 (High K Fault) Scenario ..... K4.17-11**

**Figure K4.17-6: Particle Tracking Results: Sensitivity Scenario S7 (High K Bedrock) ..... K4.17-15**

**Figure K4.17-7: End-of-Mining Particle Tracking Results for High K Fault Near Bulk TSF  
 Scenario..... K4.17-16**

**Figure K4.18-1: Inflow Loads—Open Pit Water Management Pond ..... K4.18-9**

**Figure K4.18-2: Inflow Loads—Bulk TSF ..... K4.18-10**

**Figure K4.18-3: Inflow Loads—Main Embankment Seepage Collection Pond ..... K4.18-11**

**Figure K4.18-4: Inflow Loads—Pyritic TSF..... K4.18-12**

**Figure K4.18-5: Inflow Loads—Main Water Management Pond ..... K4.18-13**

**Figure K4.18-6: Open Pit Surface Water Elevations ..... K4.18-21**

**Figure K4.18-7: Main WMP Volumes in Early Closure ..... K4.18-22**

**Figure K4.18-8: Average Annual Flow from WTPs in Operations and Closure Phases ..... K4.18-23**

**Figure K4.18-9: Modeled TDS in Pit Lake ..... K4.18-38**

**Figure K4.18-10: Modeled Sulfate Concentration in Pit Lake ..... K4.18-39**

**Figure K4.18-11: Modeled Temperature Gradient in Pit Lake..... K4.18-40**

**Figure K4.18-12: Modeled Dissolved Oxygen Concentration in Pit Lake ..... K4.18-41**

**Figure K4.18-13: Modeled Dissolved Copper Concentration in Pit Lake ..... K4.18-43**

**Figure K4.18-14: Modeled Dissolved Zinc Concentration in Pit Lake ..... K4.18-44**

**Figure K4.18-15: Downstream Effluent Dilution..... K4.18-75**

**Figure K4.20-1: Mine Site Construction Maximum Modeled Project Impacts (AAAQS)..... K4.20-16**

**Figure K4.20-2: Mine Site Construction Maximum Modeled Project-Only Impacts (PSD) .... K4.20-17**

**Figure K4.20-3: Mine Site Operations Maximum Modeled Project Impacts (AAAQS) ..... K4.20-19**

**Figure K4.20-4: Mine Site Operations Maximum Modeled Project-Only Impacts  
 (PSD Increment)..... K4.20-20**

**Figure K4.20-5: Amakdedori Port Operations Maximum Modeled Project Impacts..... K4.20-23**

**Figure K4.20-6: Compressor Station Operations Maximum Modeled Project Impacts ..... K4.20-25**

**Figure K4.22 through Figure K4.22-62: Wetlands and Other Waters/Special Aquatic  
 Sites Map Series ..... K4.22-2**

**Figure K4.24-1: Frequency of Percentage Change in Suitable Spawning Habitat from  
 Pre-Mine to Operations or Closure during an Average Water Year for Pacific Salmon K4.24-16**

**Figure K4.24-2: Predicted Changes in Suitable Habitat for Chinook Salmon Spawning  
 during an Average Water Year According to Reach and Mine Operational Period..... K4.24-16**

**Figure K4.24-3 through Figure K4.24-17: Map Series—Predicted Changes in the Amount  
 (Acres) of Suitable Habitat from Pre-Mine to Operations (Left) or to Closure  
 (Right) during an Average Water Year for Select Resident and Anadromous Fish ..... K4.24-27**

**LIST OF TABLES**

**Table K2-1: Alternative 1a Project Footprint..... K2-1**

**Table K2-2: Summary of Project Phases ..... K2-2**

**Table K2-3: Proposed Construction Schedule..... K2-3**

**Table K2-4: Proposed Material to be Mined ..... K2-4**

**Table K2-5: Mine Site Supplies and Quantities..... K2-4**

**Table K2-6: Alternative 1a Material Site Quantities Estimates ..... K2-7**

**Table K2-7: Alternative 1a Water Extraction Site Quantity Estimates ..... K2-10**

**Table K2-8: Alternative 1a Water Extraction Site Access Roads ..... K2-11**

**Table K2-9: Alternative 1 Project Footprint..... K2-11**

**Table K2-10: Alternative 1—Summer Only Ferry Operations Variant Project Footprint ..... K2-13**

**Table K2-11: Alternative 1—Kokhanok East Ferry Terminal Variant Project Footprint..... K2-14**

**Table K2-12: Alternative 1—Amakdedori Port Pile-Supported Dock Variant Project Footprint . K2-15**

**Table K2-13: Alternative 1 Material Site Quantities Estimates ..... K2-16**

**Table K2-14: Alternative 1—Kokhanok East Ferry Terminal Variant Material Site Quantities Estimates..... K2-19**

**Table K2-15: Alternative 1 Water Extraction Site Quantity Estimates ..... K2-20**

**Table K2-16: Alternative 1 Kokhanok East Ferry Terminal Variant Water Extraction Site Quantity Estimates ..... K2-21**

**Table K2-17: Alternative 1 Water Extraction Site Access Roads ..... K2-22**

**Table K2-18: Alternative 2 Project Footprint..... K2-23**

**Table K2-19: Alternative 2—Newhalen River North Crossing Variant Project Footprint..... K2-24**

**Table K2-20: Alternative 2—Summer Only Ferry Operations Variant Project Footprint ..... K2-25**

**Table K2-21: Alternative 2—Diamond Point Port Pile-Supported Dock Variant Project Footprint..... K2-26**

**Table K2-22: Alternative 2 Material Site Quantities Estimates ..... K2-27**

**Table K2-23: Alternative 2—Newhalen River North Crossing Variant Material Site Quantities Estimates..... K2-28**

**Table K2-24: Alternative 2 Water Extraction Site Quantity Estimates ..... K2-31**

**Table K2-25: Alternative 2 Water Extraction Site Access Roads ..... K2-33**

**Table K2-26: Alternative 3 Project Footprint..... K2-33**

**Table K2-27: Alternative 3—Concentrate Pipeline Variant Project Footprint ..... K2-35**

**Table K2-28: Alternative 3 Material Site Quantities Estimates ..... K2-36**

**Table K2-29: Alternative 3 Water Extraction Site Quantity Estimates ..... K2-38**

**Table K3.6-1: 2000-2019 20-Year Average Harvest Distribution by Species (Percent)..... K3.6-1**

**Table K3.6-2: 2000-2019 20-Year Annual Bristol Bay Sockeye Salmon Harvest by District ..... K3.6-1**

**Table K3.6-3: 2000-2019 Annual Bristol Bay Sockeye Salmon Escapement by District ..... K3.6-1**

**Table K3.6-4: Inshore<sup>1</sup> Sockeye Salmon Run by River System, 2000-2019, Naknek-Kvichak District (Thousands of Fish)..... K3.6-2**

**Table K3.6-5: Inshore Sockeye Salmon Run by River System, 2000-2019, Nushagak District (Thousands of Fish) ..... K3.6-3**

**Table K3.6-6: Comparison of Vessels Used in the Bristol Bay Drift Gillnet Fishery, by Residency of Permit Holder..... K3.6-4**

**Table K3.6-7: Comparative Estimates of Sport Fishing Effort, Days..... K3.6-5**

**Table K3.7-1: Known AHRS Locations in the EIS Analysis Area ..... K3.7-1**

**Table K3.7-2: AHRS Sites in the EIS Analysis Area for all Alternatives..... K3.7-14**

<b>Table K3.7-3: Known Place Names in the EIS Analysis Area .....</b>	<b>K3.7-17</b>
<b>Table K3.7-4: Place Names in the EIS Alternatives .....</b>	<b>K3.7-20</b>
<b>Table K3.7-5: Interview-Identified Cultural Resources in the EIS Analysis Area .....</b>	<b>K3.7-23</b>
<b>Table K3.7-6: Interview-Identified Cultural Resources in the EIS Alternatives .....</b>	<b>K3.7-31</b>
<b>Table K3.9-1: Select Land Mammal Harvest by Game Management Unit, 2013-2017 .....</b>	<b>K3.9-1</b>
<b>Table K3.10-1: Social Determinants of Health (HEC 1) .....</b>	<b>K3.10-2</b>
<b>Table K3.10-2: Accidents and Injuries (HEC 2) .....</b>	<b>K3.10-4</b>
<b>Table K3.10-3: Food, Nutrition, and Subsistence (HEC 4) .....</b>	<b>K3.10-6</b>
<b>Table K3.10-4: Infectious Diseases (HEC 5) .....</b>	<b>K3.10-7</b>
<b>Table K3.10-5: Non-Communicable and Chronic Diseases (HEC 7) .....</b>	<b>K3.10-9</b>
<b>Table K3.10-6: Health Professional Shortage Area Ratings .....</b>	<b>K3.10-12</b>
<b>Table K3.10-7: Safety Services .....</b>	<b>K3.10-13</b>
<b>Table K3.12-1: Flight Paths near Iliamna Lake .....</b>	<b>K3.12-2</b>
<b>Table K3.14-1: Corresponding ESS and 2006 Classifications for Applicable Soils .....</b>	<b>K3.14-1</b>
<b>Table K3.14-2: Mine Site Soil Types and Characteristics .....</b>	<b>K3.14-2</b>
<b>Table K3.14-3: Mine Site Study Area Surface Soil Trace Elements and Cations .....</b>	<b>K3.14-6</b>
<b>Table K3.14-4: Mine Site Study Area Surface Soil Diesel Range Organics and Residual Range Organics, and Total Organic Carbon .....</b>	<b>K3.14-8</b>
<b>Table K3.14-5: Transportation Corridor Surface Soil Trace Elements and Cations .....</b>	<b>K3.14-9</b>
<b>Table K3.14-6: Transportation Corridor Surface Soil Diesel Range Organics and Residual Range Organics, and Total Organic Carbon .....</b>	<b>K3.14-11</b>
<b>Table K3.15-1: Baseline Geotechnical Data Coverage at Mine Site .....</b>	<b>K3.15-2</b>
<b>Table K3.16-1: Streamflow Gaging Stations (Continuous Flow Data) .....</b>	<b>K3.16-1</b>
<b>Table K3.16-2: Early Spring Low-Flow Measurements Summary 2005 to 2012<sup>1</sup> .....</b>	<b>K3.16-3</b>
<b>Table K3.16-3: Average Annual Streamflow at Gaging Stations, 2004 to 2012 .....</b>	<b>K3.16-6</b>
<b>Table K3.16-4: Seasonal Maximum and Annual Instantaneous Peak Discharge at Select Gaging Stations—Mine Site, 2004 to 2012<sup>1</sup> .....</b>	<b>K3.16-7</b>
<b>Table K3.16-5: Return Period Peak Flows in Mine Study Area .....</b>	<b>K3.16-8</b>
<b>Table K3.16-6: USGS and PLP Gaging Stations in Transportation and Natural Gas Pipeline Corridors—Alternative 2 .....</b>	<b>K3.16-9</b>
<b>Table K3.16-7: Summer 2004 Instantaneous Discharge Measurements in Transportation and Natural Gas Pipeline Corridors—Alternative 2<sup>1</sup> .....</b>	<b>K3.16-10</b>
<b>Table K3.16-8: Winter 2005 Instantaneous Discharge Measurements in the Transportation and Natural Gas Pipeline Corridor—Alternative 2<sup>1</sup> .....</b>	<b>K3.16-11</b>
<b>Table K3.16-9: Summer 2005 Instantaneous Discharge Measurements in Transportation and Natural Gas Pipeline Corridors—Alternative 2<sup>1</sup> .....</b>	<b>K3.16-12</b>
<b>Table K3.16-10: Estimated Peak Streamflows in the Transportation and Natural Gas Pipeline Corridors—Alternative 2<sup>1</sup> .....</b>	<b>K3.16-14</b>
<b>Table K3.16-11: Baseline Watershed Model Sub-Catchment Areas by Elevation Band .....</b>	<b>K3.16-20</b>
<b>Table K3.16-12 Baseline Watershed Model Climate Correlation Factors .....</b>	<b>K3.16-23</b>
<b>Table K3.16-13: Baseline Watershed Model Calibrated Model Parameters .....</b>	<b>K3.16-31</b>
<b>Table K3.16-14: Nash Sutcliff Efficiency (NSE) Results for Gaging Stations .....</b>	<b>K3.16-32</b>
<b>Table K3.16-15: Baseline Watershed Model—Monthly Mean Streamflow Estimates (cfs) .....</b>	<b>K3.16-35</b>
<b>Table K3.16-16: Baseline Watershed Model—Average Annual Simulated Surface Water and Groundwater Flows (1942-2017) .....</b>	<b>K3.16-36</b>



<b>Table K3.16-17: Baseline Watershed Model—Summary of Precipitation, Runoff, and Groundwater Water Balance Components .....</b>	<b>K3.16-37</b>
<b>Table K3.16-18: Summary of the Deviations between the Measured and Predicted Values during Calibration.....</b>	<b>K3.16-38</b>
<b>Table K3.16-19: Summary of the Deviations between the Measured and Predicted Values during Validation .....</b>	<b>K3.16-39</b>
<b>Table K3.17-1: Summary of Aquifers at Mine Site .....</b>	<b>K3.17-9</b>
<b>Table K3.17-2: Summary of Hydraulic Conductivity Testing Results from Slug Tests .....</b>	<b>K3.17-25</b>
<b>Table K3.18-1: Criteria Used for Comparison to Water and Sediment Quality Data .....</b>	<b>K3.18-2</b>
<b>Table K3.18-2: Summary of Rock and Tailings Geochemical Testing Program.....</b>	<b>K3.18-7</b>
<b>Table K3.18-3: Summary of ABA Results for Waste Rock.....</b>	<b>K3.18-9</b>
<b>Table K3.18-4: Analytical Results for Representative Tailings Supernatants .....</b>	<b>K3.18-19</b>
<b>Table K3.18-5: Statistical Summary by Quarry for Selected Elements .....</b>	<b>K3.18-21</b>
<b>Table K3.18-6: Comparison of Waste Rock Categories and Proportions of Samples Tested .....</b>	<b>K3.18-22</b>
<b>Table K3.18-7: Surface Water Data Summary—NFK River, Mine Site .....</b>	<b>K3.18-23</b>
<b>Table K3.18-8: Surface Water Data Summary—SFK River, Mine Site .....</b>	<b>K3.18-26</b>
<b>Table K3.18-9: Surface Water Data Summary—UTC, Mine Site .....</b>	<b>K3.18-29</b>
<b>Table K3.18-10: Surface Water Data Summary—Frying Pan Lake, Mine Site.....</b>	<b>K3.18-32</b>
<b>Table K3.18-11: Surface Water Data Summary—North Access Route, West Part .....</b>	<b>K3.18-35</b>
<b>Table K3.18-12: Surface Water Data Summary—North Access Route, East Part .....</b>	<b>K3.18-39</b>
<b>Table K3.18-13: Surface Water Data Summary—Iliamna Lake, Transportation Corridor.....</b>	<b>K3.18-43</b>
<b>Table K3.18-14: Spatial Regression Analysis, NFK River<sup>a</sup> .....</b>	<b>K3.18-47</b>
<b>Table K3.18-15: Spatial Regression Analysis, SFK River<sup>a</sup>.....</b>	<b>K3.18-48</b>
<b>Table K3.18-16: Spatial Regression Analysis, UTC<sup>a</sup>.....</b>	<b>K3.18-49</b>
<b>Table K3.18-17: Groundwater Well Completions and Number of Samples .....</b>	<b>K3.18-52</b>
<b>Table K3.18-18: Groundwater Data Summary—Mine Site .....</b>	<b>K3.18-56</b>
<b>Table K3.18-19: Sediment Data Summary—Mine Site.....</b>	<b>K3.18-61</b>
<b>Table K3.18-20: Sediment Data Summary—Iliamna Lake, Transportation Corridor.....</b>	<b>K3.18-62</b>
<b>Table K3.26-1: Summary of Project Vegetation Types in the Mapping Area .....</b>	<b>K3.26-2</b>
<b>Table K4.10-1: Step 1—Impact Dimensions .....</b>	<b>K4.10-2</b>
<b>Table K4.10-2: Steps 2, 3, and 4—Likelihood and Overall Impact Ratings .....</b>	<b>K4.10-3</b>
<b>Table K4.10-3: Summary of HEC 1 Impacts: Social Determinants of Health .....</b>	<b>K4.10-7</b>
<b>Table K4.10-4: Summary of HEC 2 Impacts: Accidents and Injuries for Alternative 1a .....</b>	<b>K4.10-14</b>
<b>Table K4.10-5: Pebble Project COPCs .....</b>	<b>K4.10-21</b>
<b>Table K4.10-6: Potential Health Effects for Metal COPCs.....</b>	<b>K4.10-23</b>
<b>Table K4.10-7: Annual HAP and PM Comparison.....</b>	<b>K4.10-25</b>
<b>Table K4.10-8: Summary of HEC 3 Impacts: Exposure to Potentially Hazardous Materials..</b>	<b>K4.10-38</b>
<b>Table K4.10-9: Summary of HEC 4 Impacts: Food, Nutrition, and Subsistence.....</b>	<b>K4.10-42</b>
<b>Table K4.10-10: Summary of HEC 5 Impacts: Infectious Diseases .....</b>	<b>K4.10-46</b>
<b>Table K4.10-11: Summary of HEC 6 Impacts: Water and Sanitation .....</b>	<b>K4.10-48</b>
<b>Table K4.10-12: Summary of HEC 7 Impacts: Non-communicable and Chronic Diseases....</b>	<b>K4.10-51</b>
<b>Table K4.10-13: Summary of HEC 8 Impacts: Health and Safety Services Infrastructure and Capacity .....</b>	<b>K4.10-55</b>
<b>Table K4.10-14: Summary of HEC 2 Impacts: Accidents and Injuries for Alternative 1, Alternative 2, and Alternative 3.....</b>	<b>K4.10-59</b>

<b>Table K4.15-1: Mine Embankment and Impoundment Dimensions .....</b>	<b>K4.15-2</b>
<b>Table K4.15-2: Summary of Available Embankment Rockfill and Earthfill Material .....</b>	<b>K4.15-5</b>
<b>Table K4.15-3: Embankment Rockfill and Earthfill Material Needs .....</b>	<b>K4.15-6</b>
<b>Table K4.15-4: Bulk TSF Preliminary Seepage Analysis Input Parameters and Results .....</b>	<b>K4.15-24</b>
<b>Table K4.15-5: Geotechnical Material Parameters Used in Preliminary Stability Analyses...</b>	<b>K4.15-27</b>
<b>Table K4.15-6: Summary of Static Stability Analysis Results .....</b>	<b>K4.15-38</b>
<b>Table K4.15-7: Earthquake Return Periods for Alaska Dam Hazard Classifications .....</b>	<b>K4.15-42</b>
<b>Table K4.15-8: Probabilistic Seismic Hazard Analysis for Mine Site.....</b>	<b>K4.15-43</b>
<b>Table K4.15-9: Deterministic Seismic Hazard Analysis for Mine Site .....</b>	<b>K4.15-45</b>
<b>Table K4.15-10: Deterministic Response Spectra for Maximum Design Earthquake Scenarios .....</b>	<b>K4.15-46</b>
<b>Table K4.15-11: Post-Liquefaction Stability Cases Evaluated for Bulk TSF Main Embankment.....</b>	<b>K4.15-52</b>
<b>Table K4.15-12: Pit Wall Stability Modeling Input Parameters .....</b>	<b>K4.15-59</b>
<b>Table K4.15-13: Pit Wall Stability Sensitivity Analysis for Various Values of PGA.....</b>	<b>K4.15-64</b>
<b>Table K4.15-14: Probabilistic Seismic Hazard Analysis for Port Sites.....</b>	<b>K4.15-69</b>
<b>Table K4.15-15: Deterministic Seismic Hazard Analysis for Port Sites .....</b>	<b>K4.15-70</b>
<b>Table K4.16-1: Average Annual Water Balance, End of Mine—Base Case.....</b>	<b>K4.16-34</b>
<b>Table K4.16-2: Average Annual Water Balance, End of Mine—High Bedrock K Sensitivity (S7).....</b>	<b>K4.16-43</b>
<b>Table K4.16-3: Average Annual Water Balance, End of Mine—Low Bedrock K Sensitivity (S8).....</b>	<b>K4.16-52</b>
<b>Table K4.16-4: Flow Path Numbers and Descriptions.....</b>	<b>K4.16-60</b>
<b>Table K4.16-5: Average Annual Water Balance, Closure Phase 1—Base Case .....</b>	<b>K4.16-61</b>
<b>Table K4.16-6: Average Annual Water Balance, Closure Phase 1—High Bedrock K Sensitivity (S7).....</b>	<b>K4.16-68</b>
<b>Table K4.16-7: Average Annual Water Balance, Closure Phase 1—Low Bedrock K Sensitivity (S8).....</b>	<b>K4.16-75</b>
<b>Table K4.16-8: Average Annual Water Balance, Closure Phase 2—Base Case .....</b>	<b>K4.16-82</b>
<b>Table K4.16-9: Average Annual Water Balance, Closure Phase 2—High Bedrock K Sensitivity (S7).....</b>	<b>K4.16-85</b>
<b>Table K4.16-10: Average Annual Water Balance, Closure Phase 2—Low Bedrock K Sensitivity (S8).....</b>	<b>K4.16-88</b>
<b>Table K4.16-11: Average Annual Water Balance, Closure Phase 3—Base Case .....</b>	<b>K4.16-91</b>
<b>Table K4.16-12: Average Annual Water Balance, Closure Phase 3—High Bedrock K Sensitivity (S7).....</b>	<b>K4.16-95</b>
<b>Table K4.16-13: Average Annual Water Balance, Closure Phase 3—Low Bedrock K Sensitivity (S8).....</b>	<b>K4.16-99</b>
<b>Table K4.16-14: Average Annual Water Balance, Closure Phase 4—Base Case .....</b>	<b>K4.16-103</b>
<b>Table K4.16-15: Average Annual Water Balance, Closure Phase 4—High Bedrock K Sensitivity (S7).....</b>	<b>K4.16-107</b>
<b>Table K4.16-16: Average Annual Water Balance, Closure Phase 4—Low Bedrock K Sensitivity (S8).....</b>	<b>K4.16-111</b>
<b>Table K4.16-17: Water Balance Model—Base Case Total Treated Water to Environment ...</b>	<b>K4.16-115</b>
<b>Table K4.16-18: Water Balance Model—High Bedrock K Sensitivity (S7) Total Treated Water to Environment .....</b>	<b>K4.16-116</b>

<b>Table K4.16-19: Water Balance Model—Low Bedrock K Sensitivity (S8) Treated Water to Environment.....</b>	<b>K4.16-117</b>
<b>Table K4.16-20: North Fork Koktuli Change in Streamflow End of Mine and Post-Closure— Scenario S0—Without Treated Water.....</b>	<b>K4.16-118</b>
<b>Table K4.16-21: South Fork Koktuli Change in Streamflow End of Mine and Post-Closure— Scenario S0—Without Treated Water.....</b>	<b>K4.16-121</b>
<b>Table K4.16-22: Upper Talarik Creek Change in Streamflow End of Mine and Post-Closure— Scenario S0—Without Treated Water.....</b>	<b>K4.16-126</b>
<b>Table K4.16-23: North Fork Koktuli Change in Streamflow End of Mine and Post-Closure— Scenario S7—Without Treated Water.....</b>	<b>K4.16-130</b>
<b>Table K4.16-24: South Fork Koktuli Change in Streamflow End of Mine and Post Closure— Scenario S7—Without Treated Water.....</b>	<b>K4.16-133</b>
<b>Table K4.16-25: Upper Talarik Creek Change in Streamflow End of Mine and Post-Closure— Scenario S7—Without Treated Water.....</b>	<b>K4.16-137</b>
<b>Table K4.16-26: North Fork Koktuli Change in Streamflow End of Mine and Post-Closure— Scenario S8—Without Treated Water.....</b>	<b>K4.16-141</b>
<b>Table K4.16-27: South Fork Koktuli Change in Streamflow End of Mine and Post-Closure— Scenario S8—Without Treated Water.....</b>	<b>K4.16-144</b>
<b>Table K4.16-28: Upper Talarik Creek Change in Streamflow End of Mine and Post-Closure— Scenario S8—Without Treated Water.....</b>	<b>K4.16-148</b>
<b>Table K4.16-29: North Fork Koktuli Change in Streamflow End of Mine and Post-Closure— Scenario S0—With Treated Water.....</b>	<b>K4.16-152</b>
<b>Table K4.16-30: South Fork Koktuli Change in Streamflow End of Mine and Post-Closure— Scenario S0—With Treated Water.....</b>	<b>K4.16-155</b>
<b>Table K4.16-31: Upper Talarik Creek Change in Streamflow End of Mine and Post-Closure— Scenario S0—With Treated Water.....</b>	<b>K4.16-159</b>
<b>Table K4.16-32: North Fork Koktuli Change in Streamflow End of Mine and Post-Closure— Scenario S7—With Treated Water.....</b>	<b>K4.16-163</b>
<b>Table K4.16-33: South Fork Koktuli Change in Streamflow End of Mine and Post-Closure— Scenario S7—With Treated Water.....</b>	<b>K4.16-166</b>
<b>Table K4.16-34: Upper Talarik Creek Change in Streamflow End of Mine and Post-Closure— Scenario S7—With Treated Water.....</b>	<b>K4.16-170</b>
<b>Table K4.16-35: North Fork Koktuli Change in Streamflow End of Mine and Post-Closure— Scenario S8—With Treated Water.....</b>	<b>K4.16-174</b>
<b>Table K4.16-36: South Fork Koktuli Change in Streamflow End of Mining and Post-Closure— Scenario 8—With Water Treatment.....</b>	<b>K4.16-177</b>
<b>Table K4.16-37: Upper Talarik Creek Change in Streamflow End of Mine and Post-Closure— Scenario S8—With Treated Water.....</b>	<b>K4.16-181</b>
<b>Table K4.16-38: Water Treatment Plant Discharges at End of Mine, Scenario S0 (Base Case).....</b>	<b>K4.16-185</b>
<b>Table K4.16-39: Water Treatment Plant Discharges at End of Mine, Scenario S7 (High K Scenario).....</b>	<b>K4.16-185</b>
<b>Table K4.16-40: Water Treatment Plant Discharges at End of Mine, Scenario S8 (Low K Scenario).....</b>	<b>K4.16-186</b>
<b>Table K4.16-41: Water Treatment Plant Discharges Post-Closure, Scenario S0 (Base Case).....</b>	<b>K4.16-186</b>
<b>Table K4.16-42: Water Treatment Plant Discharges Post-Closure, Scenario S7 (High K Scenario).....</b>	<b>K4.16-187</b>
<b>Table K4.16-43: Water Treatment Plant Discharges Post-Closure, Scenario S8 (Low K Scenario).....</b>	<b>K4.16-187</b>

**Table K4.16-44: Change in the 50 Percent Probability of Exceedance Streamflow between Baseline and End of Mine with Water Treatment Plant Discharge Based on Scenario S0 (Base Case K)..... K4.16-188**

**Table K4.16-45: Change in the 50 Percent Probability of Exceedance Streamflow between Baseline and End of Mine with Water Treatment Plant Discharge Based on Scenario S7 (High K Scenario)..... K4.16-189**

**Table K4.16-46: Change in the 50 Percent Probability of Exceedance Streamflow between Baseline and End of Mine with Water Treatment Plant Discharge Based on Scenario S8 (Low K Scenario) ..... K4.16-190**

**Table K4.16-47: Change in the 50 Percent Probability of Exceedance Streamflow between Baseline and End of Mine without Water Treatment Plant Discharge Based on Scenario S0 (Base Case K)..... K4.16-191**

**Table K4.16-48: Change in the 50 Percent Probability of Exceedance Streamflow between Baseline and End of Mine without Water Treatment Plant Discharge Based on Scenario S7 (High K Scenario)..... K4.16-192**

**Table K4.16-49: Change in the 50 Percent Probability of Exceedance Streamflow between Baseline and End of Mine without Water Treatment Plant Discharge Based on Scenario S8 (Low K Scenario) ..... K4.16-193**

**Table K4.16-50: Change in the 50 Percent Probability of Exceedance Streamflow between Baseline and Post-Closure with Water Treatment Plant Discharge Based on Scenario S0 (Base Case K)..... K4.16-194**

**Table K4.16-51: Change in the 50 Percent Probability of Exceedance Streamflow between Baseline and Post-Closure with Water Treatment Plant Discharge Based on Scenario S7 (High K Scenario)..... K4.16-195**

**Table K4.16-52: Change in the 50 Percent Probability of Exceedance Streamflow between Baseline and Post-Closure with Water Treatment Plant Discharge Based on Scenario S8 (Low K Scenario) ..... K4.16-196**

**Table K4.16-53: Change in the 50 Percent Probability of Exceedance Streamflow between Baseline and Post-Closure without Water Treatment Plant Discharge Based on Scenario S0 (Base Case K)..... K4.16-197**

**Table K4.16-54: Change in the 50 Percent Probability of Exceedance Streamflow between Baseline and Post-Closure without Water Treatment Plant Discharge Based on Scenario S7 (High K Scenario)..... K4.16-198**

**Table K4.16-55: Change in the 50 Percent Probability of Exceedance Streamflow between Baseline and Post-Closure without Water Treatment Plant Discharge Based on Scenario S8 (Low K Scenario) ..... K4.16-199**

**Table K4.16-56: Summary North Fork Koktuli River, End of Mine, Reaches A and C ..... K4.16-200**

**Table K4.16-57: Summary North Fork Koktuli River, Post-Closure, Reaches A and C ..... K4.16-201**

**Table K4.16-58: Summary South Fork Koktuli River, End of Mine, Reaches A and E..... K4.16-202**

**Table K4.16-59: Summary South Fork Koktuli River, Post-Closure, Reaches A and E..... K4.16-203**

**Table K4.16-60: Summary Upper Talarik Creek, End of Mine, Reaches A and E ..... K4.16-204**

**Table K4.16-61: Summary Upper Talarik Creek, Post Closure, Reaches A and E ..... K4.16-205**

**Table K4.17-1: Initial Sensitivity Simulations Results for End of Mining Conditions ..... K4.17-2**

**Table K4.17-2: Range of Revised Sensitivity Results for High and Low K Scenarios Used in Subsequent Modeling, End of Mining ..... K4.17-3**

**Table K4.17-3: Summary of Radial Node Baseflow Reduction Analysis: Scenario S0 ..... K4.17-4**

**Table K4.17-4: Summary of Radial Node Baseflow Reduction Analysis: Scenario S7 (high K) ..... K4.17-5**

**Table K4.18-1: Predicted Water Release Quantity from WTPs..... K4.18-2**

**Table K4.18-2: Predicted Water Quality from Mine Site Geochemical Sources<sup>a</sup>—Part 1 ..... K4.18-5**

**Table K4.18-2: Predicted Water Quality from Mine Site Geochemical Sources<sup>a</sup>—Part 2 ..... K4.18-6**

**Table K4.18-3: 50th Percentile Modeled Mass Loads—Final Year of Operations ..... K4.18-7**

**Table K4.18-4: Predicted Water Quality in Mine Site Storage Ponds in Operations ..... K4.18-15**

**Table K4.18-5: Predicted Water Quality Inflows for WTPs in Operations ..... K4.18-17**

**Table K4.18-6: Total WTP Discharge Flows in Closure..... K4.18-25**

**Table K4.18-7: Predicted Water Quality in Mine Site Ponds—Closure Phase 1 ..... K4.18-26**

**Table K4.18-8: Predicted Water Quality in Mine Site Ponds—Closure Phase 2..... K4.18-28**

**Table K4.18-9: Predicted Water Quality in Mine Site Ponds—Closure Phase 3..... K4.18-30**

**Table K4.18-10: Predicted Water Quality in Mine Site Ponds—Closure Phase 4..... K4.18-32**

**Table K4.18-11: Predicted Water Quality of WTP Inflows in Closure Phases..... K4.18-34**

**Table K4.18-12: Backfilled Pit Lake General Features ..... K4.18-36**

**Table K4.18-13: Predicted Water Quality of WTP Discharge in Operations..... K4.18-51**

**Table K4.18-14: Predicted Water Quality of WTP Discharge in Closure Phase 1..... K4.18-54**

**Table K4.18-15: Predicted Water Quality of WTP #3 Main SCP Stream in Closure Phase 3 .. K4.18-56**

**Table K4.18-16: Predicted Water Quality of WTP #3 Open Pit Stream in Closure Phase 4.... K4.18-58**

**Table K4.18-17: Predicted Change in Sediment Quality from Dust Deposition ..... K4.18-61**

**Table K4.18-18: Predicted Change in Surface Water Quality from Dust Deposition ..... K4.18-62**

**Table K4.18-19: Predicted Change in Surface Water Quality from Dust Deposition—  
 Mixing Model..... K4.18-66**

**Table K4.18-20: Predicted Change in Groundwater Quality from Dust Deposition ..... K4.18-69**

**Table K4.18-21: Annual Environmental Mass Loading—Mining Operations ..... K4.18-72**

**Table K4.20-1: Mine Site Construction Emission Summary ..... K4.20-2**

**Table K4.20-2: Mine Site Operations Emission Summary ..... K4.20-3**

**Table K4.20-3: Mine Site Closure Emission Summary ..... K4.20-4**

**Table K4.20-4: Transportation Corridor Construction Emission Summary..... K4.20-5**

**Table K4.20-5: Transportation Corridor Operations Emission Summary ..... K4.20-6**

**Table K4.20 6: Amakdedori Port Construction Emission Summary..... K4.20-7**

**Table K4.20-7: Amakdedori Port Operations Emission Summary ..... K4.20-8**

**Table K4.20-8: Compressor Station Construction Emission Summary ..... K4.20-9**

**Table K4.20-9: Kenai Compressor Station Operations Emission Summary..... K4.20-10**

**Table K4.20-10: Prevention of Significant Deterioration Increments and Alaska Ambient  
 Air Quality Standards..... K4.20-12**

**Table K4.20-11: Mine Site Construction Maximum Modeled Project Impacts Compared to  
 the AAAQS ..... K4.20-15**

**Table K4.20-12: Mine Site Construction Maximum Modeled Project-Only Impacts  
 Compared to Class II PSD Increment Limit ..... K4.20-16**

**Table K4.20-13: Mine Site Operations Maximum Modeled Project Impacts Compared to  
 the AAAQS ..... K4.20-18**

**Table K4.20-14: Mine Site Operations Maximum Modeled Project-Only Impacts Compared  
 to Class II PSD Increment Limit ..... K4.20-18**

**Table K4.20-15: Amakdedori Port Operations—Maximum Modeled Project Impacts  
 Compared to the AAAQS ..... K4.20-22**

**Table K4.20-16: Kenai Compressor Station Operations—Maximum Modeled Project  
 Impacts Compared to the AAAQS ..... K4.20-24**

**Table K4.24-1: Predicted Quantity (acres) of Suitable Spawning Habitat by Species,  
 Reach, Water Year, and Mine Phase..... K4.24-17**

**Table K4.24-2: Predicted Quantity (acres) of Suitable Juvenile Rearing Habitat by Species, Reach, Water Year, and Mine Phase ..... K4.24-21**

**Table K4.24-3: Predicted Quantity (acres) of Suitable Adult Rearing Habitat by Species, Reach, Water Year, and Mine Phase..... K4.24-25**

**Table K4.25-1: Summary of NMFS Acoustic Thresholds ..... K4.25-2**

**Table K4.25-2: Summary of Noise Sources for Each Activity ..... K4.25-3**

**Table K4.25-3: Underwater Noise Impacts from Various Dredging Technologies ..... K4.25-4**