**MATANUSKA-SUSITNA BOROUGH INFORMATION MEMORANDUM IM No. 22-023**

**SUBJECT: Disposal of Port MacKenzie conveyor system.**

**AGENDA OF: January 18, 2022**

**Assembly Action:**

Approved under the consent agenda
1-18-22

**MANAGER RECOMMENDATION:** Present to the Assembly for consideration.

**APPROVED BY MICHAEL BROWN, BOROUGH MANAGER:** MVB

| Route To: | Department/Individual | Initials | Remarks |
|---|---|---|---|
| | Purchasing Director | | |
| | Community Development Director | EP | |
| | Finance Director | Jane for CH | |
| | Borough Attorney | for N.S. | |
| | Borough Clerk | 1/18/22 | |
| | Port Operations Manager | | |

**ATTACHMENT(S):** Fiscal Note: YES _____ NO ___x__
Resolution Serial No. 22-010 (2pp)
Port MacKenzie Conveyor Valuation Report (42pgs)

**SUMMARY STATEMENT:** On April 20, 2021, also known as the effective date of the Termination of Leases and Release between the Borough and NPI, the Assembly approved Ordinance Serial No. 21-039 releasing any interest NPI may have in the conveyor system to the Borough.

In January 2020, PND Engineers, Inc. (PND) provided the Borough with an inspection and evaluation of the existing condition, developed a rough order of magnitude (ROM) cost estimate for bringing the system into an operational condition.

1. The estimates provided are outdated and do not take into account the rise in inflation and the global shipping and manufacturing crisis experienced today. However, staff estimate repair costs to make the existing conveyor operable to be in the range of $600,000. PND provided other cost estimates for

retrofitting the conveyor system for other materials/commodities and the valuation if the conveyor system was repaired and relocated.

The MSB Natural Resource Manager has indicated that the timber industry within the Borough has attempted wood chipping operations to no avail. These attempts have failed due to the cost of timber, chipping, and the transportation to get the chips to tidewater which far exceeds the value of the chips.

**RECOMMENDATION OF ADMINISTRATION: Administration** recommends the Assembly direct the Borough Manager to dispose of the conveyor system within the Port MacKenzie Special Use District due to the repair, operation, and management of the conveyor system are not cost effective and present the Borough with unexpected liabilities, management and operation issues if retained.

MATANUSKA-SUSITNA BOROUGH
FISCAL NOTE

Agenda Date: January 18, 2022
Subject: Disposal of Port MacKenzie conveyor system.

ORIGINATOR: Russ Kraft

| FISCAL ACTION (TO BE COMPLETED BY FINANCE) | FISCAL IMPACT YES (NO) |
|---|---|
| AMOUNT REQUESTED # | FUNDING SOURCE Disposal of Equipment |
| FROM ACCOUNT # | PROJECT # |
| TO ACCOUNT : | PROJECT # |
| VERIFIED BY: Jamie Whitland | CERTIFIED BY: |
| DATE: 1/6/22 | DATE: |

EXPENDITURES/REVENUES: (Thousands of Dollars)

| OPERATING | FY2022 | FY2023 | FY2024 | FY2025 | FY2026 | FY2027 |
|---|---|---|---|---|---|---|
| Personnel Services | | | | | | |
| Travel | | | | | | |
| Contractual | | | | | | |
| Supplies | | | | | | |
| Equipment | | | | | | |
| Land/Structures | | | | | | |
| Grants, Claims | | | | | | |
| Miscellaneous | | | | | | |
| TOTAL OPERATING | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| CAPITAL | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| REVENUE | # | | | | | |

FUNDING: (Thousands of Dollars)

| | | | | | | |
|---|---|---|---|---|---|---|
| General Fund | | | | | | |
| State/Federal Funds | | | | | | |
| Other | # | | | | | |
| TOTAL | # | | | | | |

POSITIONS:

| | | | | | | |
|---|---|---|---|---|---|---|
| Full-Time | | | | | | |
| Part-Time | | | | | | |
| Temporary | | | | | | |

ANALYSIS: (Attach a separate page if necessary) # Amt of Fiscal Impact TBD based on equipment value & any revenue that may be received from disposal.

PREPARED BY: _____ PHONE: _____

DEPARTMENT: _____ DATE: _____

APPROVED BY: Maggie Stewart DATE: 1/10/2022

IM No .22-023
Resolution No. 22-010

January 2020

Prepared by:

P | N | D
ENGINEERS, INC.

# Port MacKenzie Conveyor Valuation

## Inspection and Valuation Report

Prepared for:

Matanuska-Susitna Borough

350 E. Dahlia Ave.
Palmer, AK 99645

IM 22-023
RS 22-010

## Table of Contents



## Appendix





IM 22-023
RS 22-010

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IM 22-023
RS 22-010

# 1.0 Conveyor System Overview

## 1.1 Project Background and Overview

Port MacKenzie, owned by the Matanuska-Susitna Borough (MSB), features a 550-foot-long barge dock bulkhead and a 1,200-foot-long pile support deep draft dock, which can accommodate Panamax- and Cape-class vessels. The Port is also served by a privately owned woodchip conveyor, which routes from the reclaim/feeder area inland (east) of the docks to the deep draft dock and ship loadout facilities. The conveyor system consists of reclaim/feeder facilities, a five-segment conveyor run with structural supports, a corrugated metal pipe (CMP) tunnel, and a deep draft dock loadout (Figure 1).

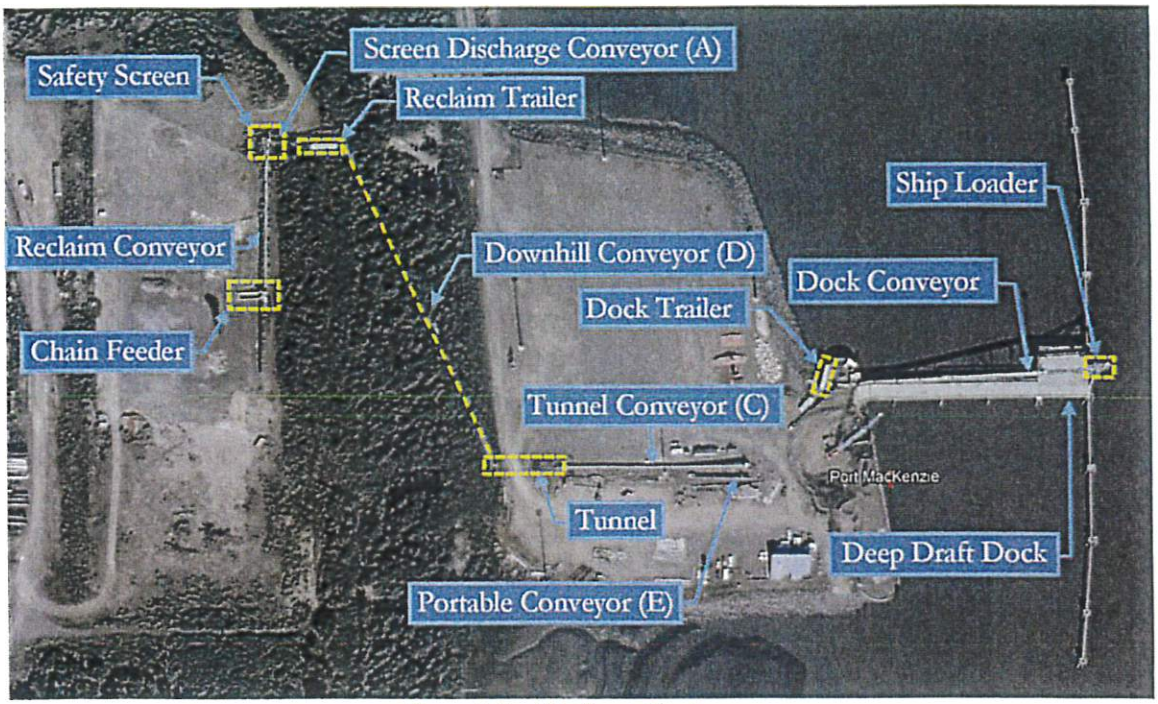


Figure 1: Port MacKenzie Site Layout

The conveyor system is a custom design, incorporating conveyors manufactured by Dakota Fabricating, with feeders, screens, and ship loading facilities of an unknown manufacturer relocated from Homer, Alaska. The system and supporting structures were constructed between 2004 and 2005 and provides a total conveyor length of approximately 2,160 feet with a vertical climb of 185 feet.

The MSB requested PND Engineers, Inc. (PND) develop a valuation assessment of the conveyor system. The scope of this project included:

1. Evaluation of the existing conveyor condition, including electrical, mechanical, and structural components of the reclaim, conveyor segments, and loadout facilities.
2. Develop a rough order of magnitude (ROM) cost estimate for bringing the system into operational condition.
3. Determine a fair market value of the system in its current condition.



IM 22-023
RS 22-010

# 2.0 Inspections

The Port MacKenzie conveyor system's electrical, mechanical, and structural components were inspected to determine the overall condition of the system including the extents and severity of any existing deficiencies. PND provided structural assessment, Dakota Equipment Manufacturing Inc. (DEMI) provided mechanical assessment, and Hunt Electric, Inc. (Hunt) provided electrical assessment.

Portions of the catwalks above the deep draft dock, specifically below the hopper and ship loader, were deemed structurally unsound to traverse safely and therefore restricted mechanical and electrical inspections in the areas. Assessments at these areas were estimated based on findings across the rest of the structure.

## 2.1 Structural Evaluation

PND Senior Engineer Michael Beglin, PE, conducted a visual inspection of the conveyor's structural supports for each segment from the feed area to the ship loader on September 16, 2019. Inspection of the dock structure itself was not included in this conveyor assessment. Although the supporting structural members were found to be generally in fair condition, some deficiencies were noted.

### 2.1.1 Downhill Support Piles

The support piles for this section of conveyor running downhill from the screen discharge to the CMP tunnel were not inspected at ground level due to difficult access associated with brush growth along the route. Visual inspections were conducted from the conveyor's catwalk.

*Deficiencies*

Lateral movement was observed on two of the downhill conveyor support piles. This pile movement has resulted in the conveyor being pulled out of alignment (Figure 2). Piles are identified numerically in this report and are numbered sequentially beginning at the bottom end of the downhill conveyor run (before its entrance to the CMP tunnel) upward, at pile #1.



IM 22-023
RS 22-010

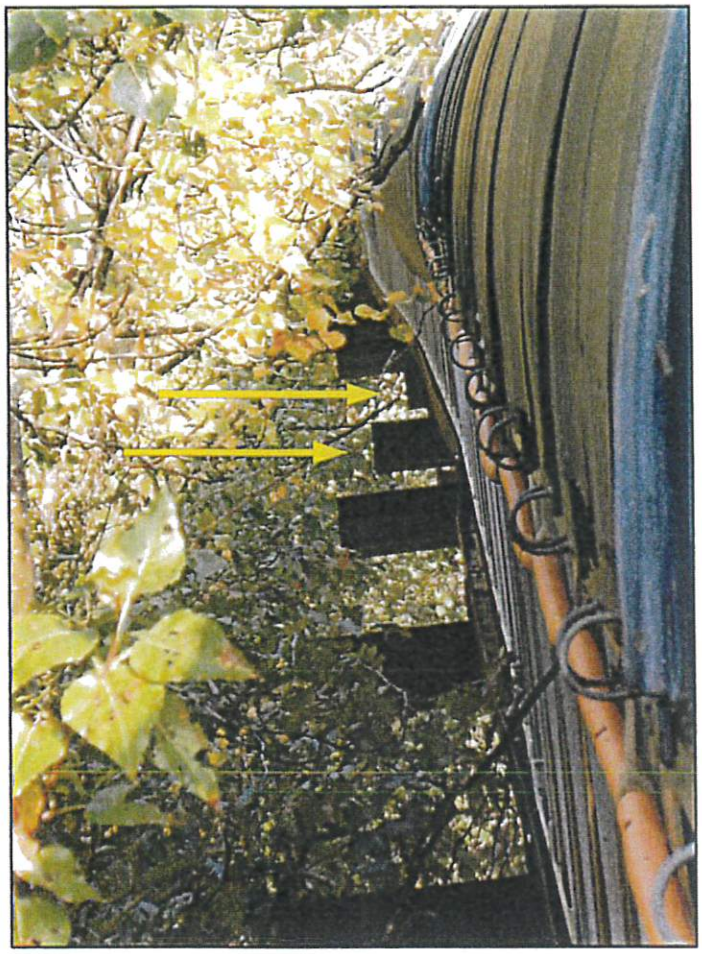

Figure 2: Conveyor and Support Pile Out of Alignment

Based on the September 2019 inspection findings, pile #8 has moved approximately 7" out of alignment in the downhill direction, and the pile #9 cap appears to have moved approximately 19" out of alignment in the downhill direction. Movement was estimated based on relative distance between the conveyor trestle and angle brackets attached to the pile cap (Figure 3).



IM 22-023
RS 22-010

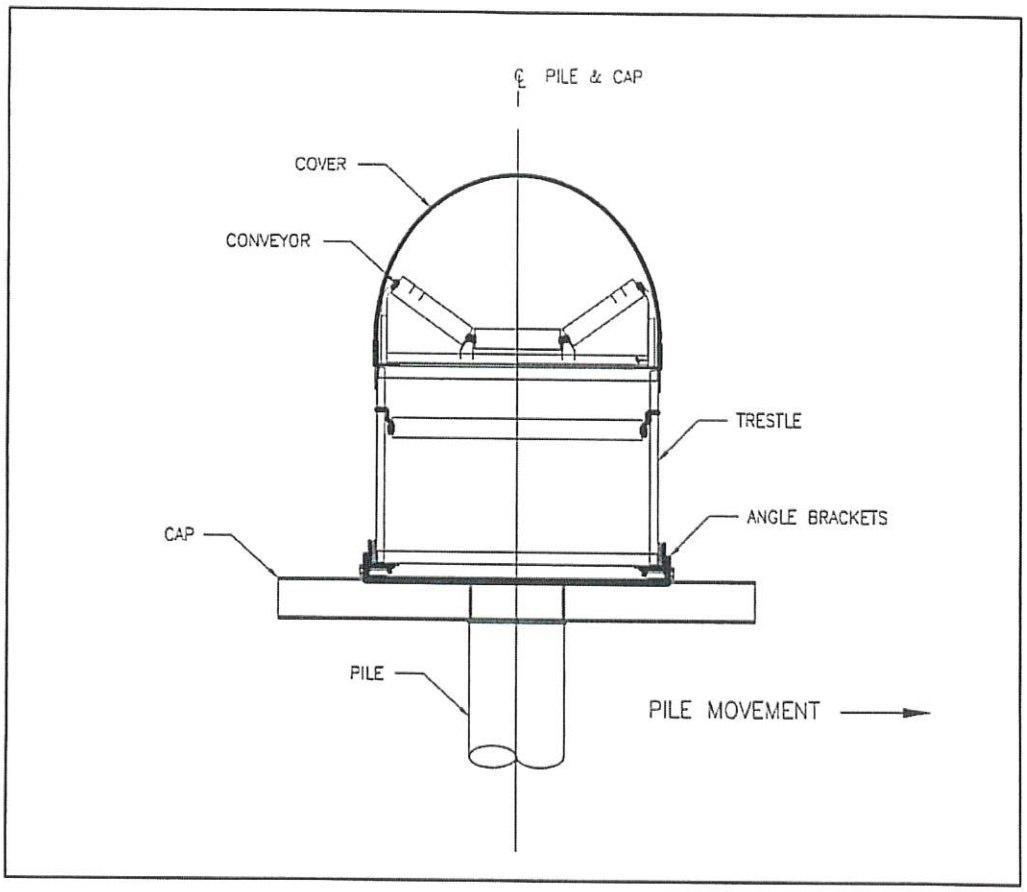


Figure 3: Conveyor and Downhill Support Section

Although the angle brackets serving to guide the conveyor trestle appear to have followed the lateral movement of the pile and cap to an extent, the movement of the pile cap relative to the trestle appears to have exceeded the angle brackets' original installed position at both pile #8 and pile #9. This indicates that the connections between the pile cap and angle brackets may have failed, thereby allowing the pile and pile caps to move freely relative to the angle brackets. Due to lack of access, the condition of these connections could not be confirmed during the inspection.

Approximately 3-4" remain between the uphill pile cap edge and the uphill angle bracket at pile #9, and lateral movement exceeding this will result in one side of the conveyor trestle being suspended.

It should be noted that the support piles for the downhill conveyor were constructed in November 2004, with the downhill conveyor installed the following year in 2005. In early 2006, a new pile was installed adjacent to the conveyor support pile (pile #8 from the south) with a lateral pipe brace (Figure 4). It is speculated the purpose of the lateral support constructed in 2006 was to inhibit downhill movement of pile #8. It is unknown to what extent the pile had shifted at the time of construction of the support, but limited images during original installation appear to show minimal movement



IM 22-023
RS 22-010

compared to its current condition. PND is unaware of any quantitative monitoring of the pile movement since then.

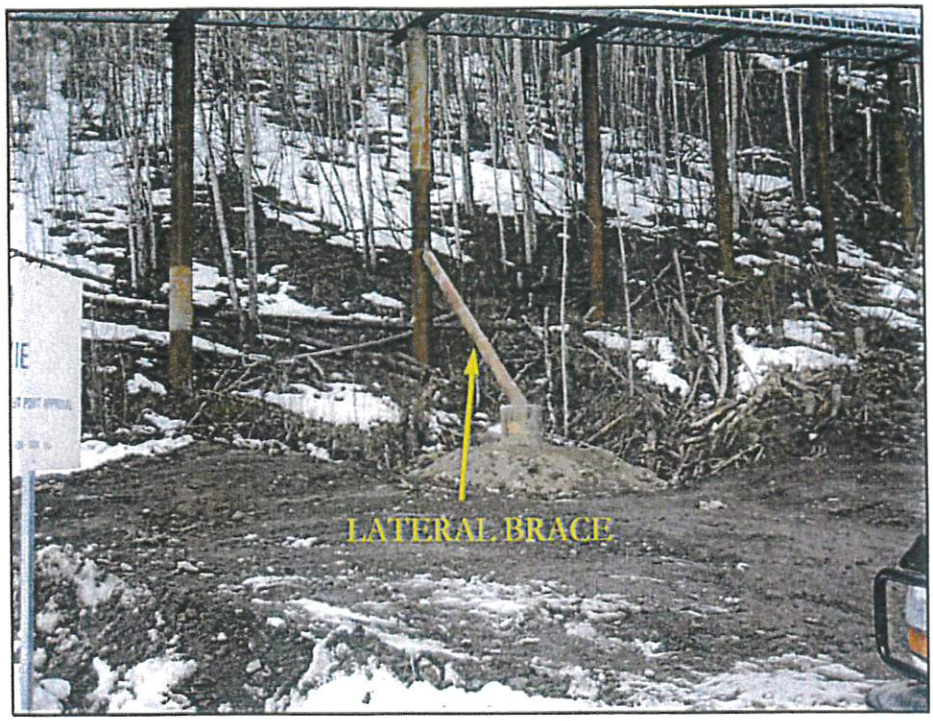


Figure 4: Pile #8 Support Bracing (April 9, 2006)

*Recommendations*

Due to the significant pile displacement observed, it is recommended that this deficiency be addressed in both short-term and long-term phases. The rate at which the piles have shifted is unknown, so it cannot be estimated conclusively how long remains before the piles shift to a point where the conveyor trestle is no longer supported by the pile cap. Movement may have been caused slowly due to slope and/or pile creep or due to seismic activity in the area. Poor drainage at the bottom of the hill may also be contributing to pile movement; therefore, a long-term solution including drainage improvements is recommended to mitigate pile movement. The following actions are recommended:

- Short-Term Action (within 1 to 2 years):
  - Extend the pile caps to increase bearing length.
  - Realign trestle to relieve stresses and reinstall angle brackets.
  - Survey trestle and cap locations to establish a baseline for movement monitoring.
- Long-Term Action (within 5 years):
  - Install new pile adjacent to pile #8 and #9 with support braces to resist further downhill movement.
  - Improve drainage around piles and at the bottom of the hill.



IM 22-023
RS 22-010

### 2.1.2 Catwalks

Catwalks along the downhill conveyor and above the deep draft dock conveyor were visually inspected to determine their existing condition and functionality. The catwalk along the downhill conveyor was in good condition with no noteworthy deficiencies observed. Catwalks along the conveyor above the deep draft dock were in poor condition and considered unsafe for general use. At the time of inspection, two sections of the catwalk over the deep draft dock were deemed structurally unsound and were taped off to restrict access. Identified deficiencies and subsequent recommendations are noted below.

*Deficiencies*

Loose and missing bolts were found throughout the catwalk above the dock. Most of these were on the toe boards where splices connected one catwalk segment to the next (Figure 5). Failures at these locations may result in an unsupported catwalk as identified in the area below the hopper (Figure 6).

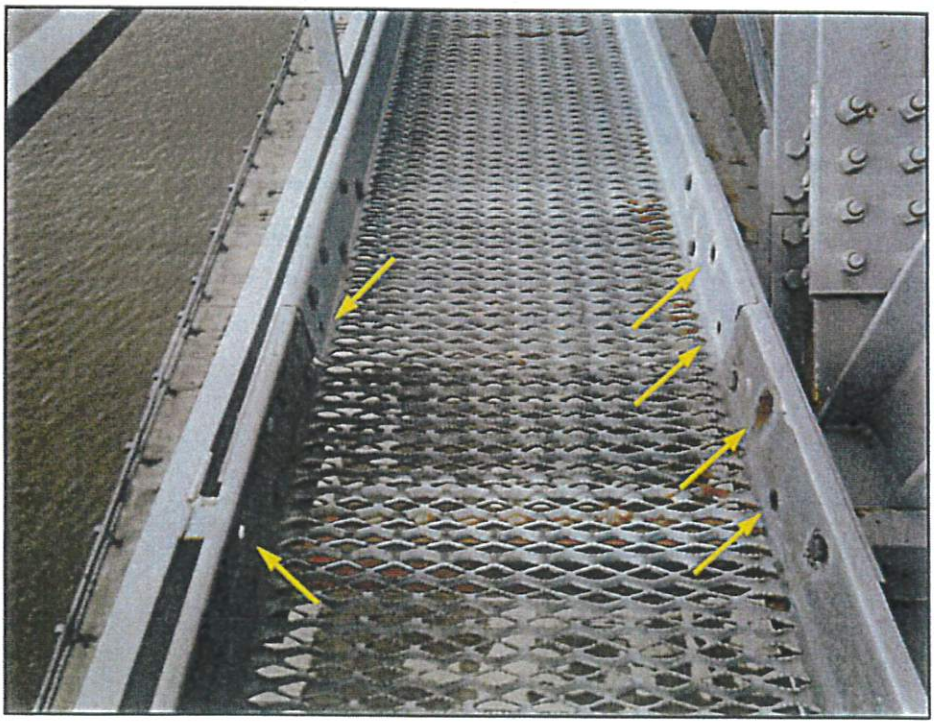

Figure 5: Loose or Missing Toe Board Splice Bolts



IM 22-023
RS 22-010

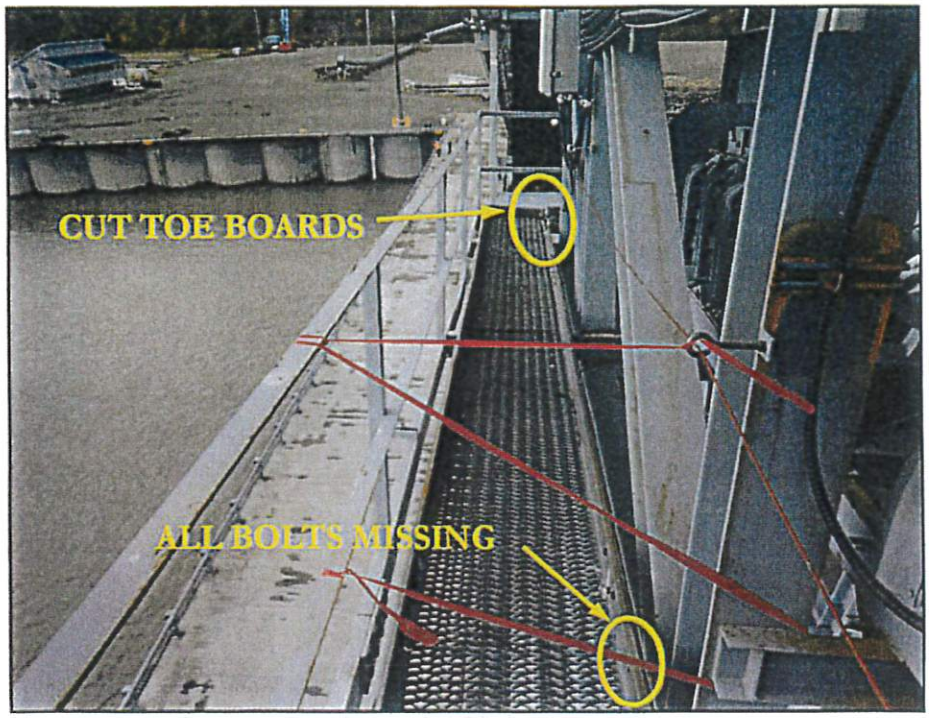


Figure 6: Failed Support Connections on Catwalk Below Hopper

Additional damage to catwalks included damaged toe board channels, rail failures (Figure 7), and damaged grating. Damage to the catwalk near the ship loader was extensive enough for structural concern, so the catwalk was taped off to restrict access (Figure 8).

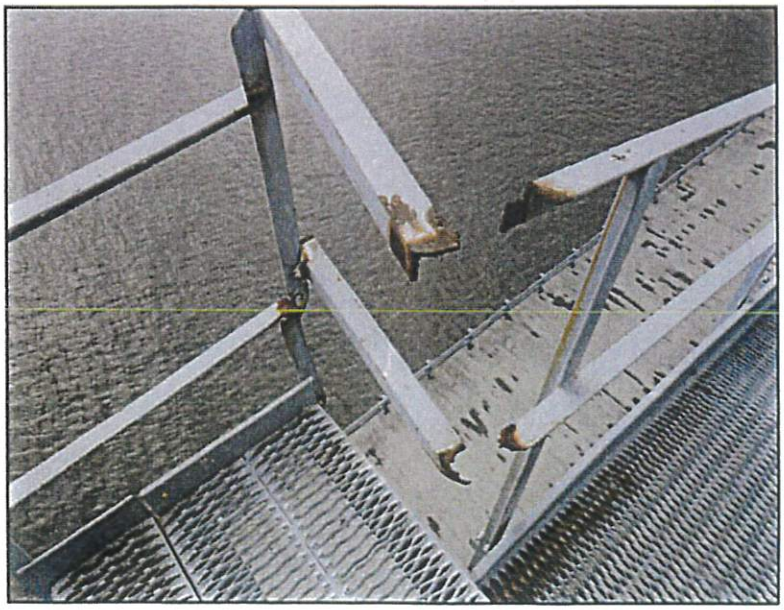

Figure 7: Damaged Catwalk Handrail



IM 22-023
RS 22-010

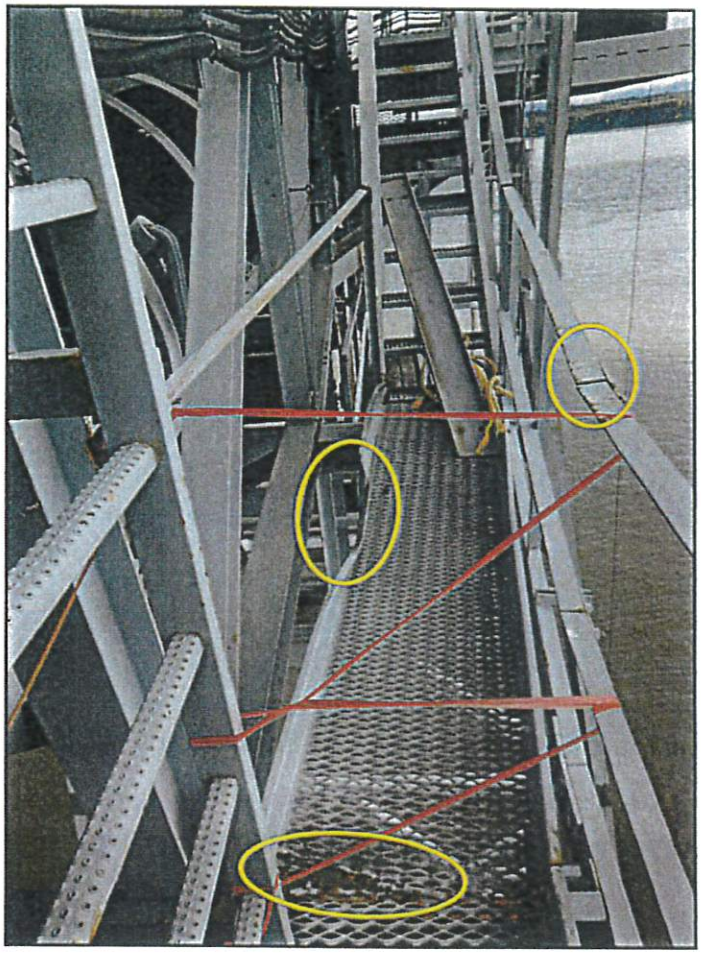

Figure 8: Restricted Access to Catwalk Near Ship Loader

*Recommendations*

It is recommended that repairs and/or replacement of the catwalks and connections be made before any other maintenance, construction, or repair crews utilize these for access. The two catwalk segments with restricted access may be too deficient to repair and may be more feasible to replace in-kind.

### 2.1.3 Superstructure Connections

Connections on the superstructure frame supporting the conveyor above the dock were visually inspected from a distance off the catwalks. Identified deficiencies and subsequent recommendations are noted below.



IM 22-023
RS 22-010

*Deficiencies*

Missing bolts were noted on numerous connections throughout the conveyor superstructure as shown in Figure 9 through Figure 12.

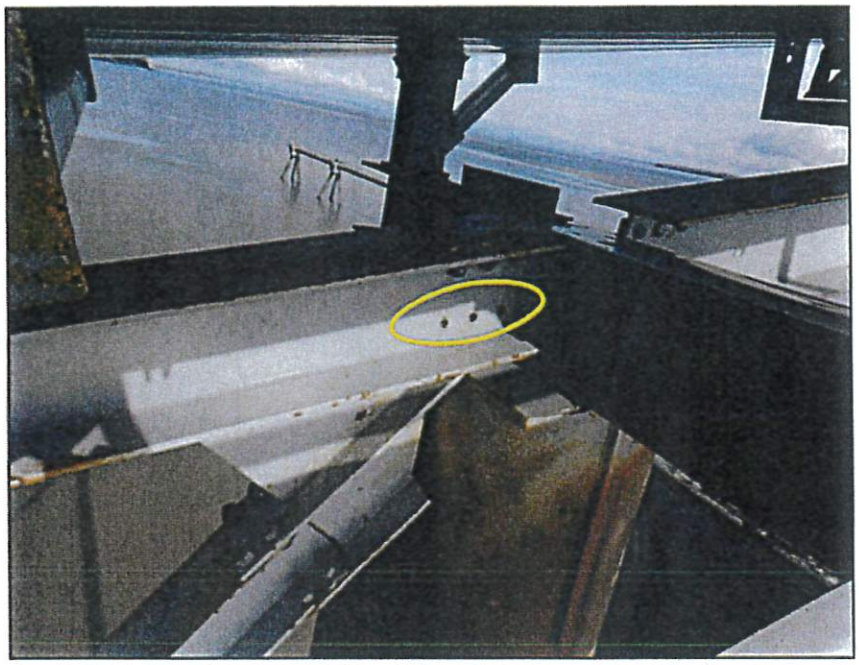

Figure 9: Missing Bolts on Framing Connections Beneath Conveyor


Figure 10: Loose Framing Bolts Near Ship Loader (January 2019)



IM 22-023
RS 22-010

Figure 11: Loose Bolts Around Hopper Framing, typ. (January 2019)

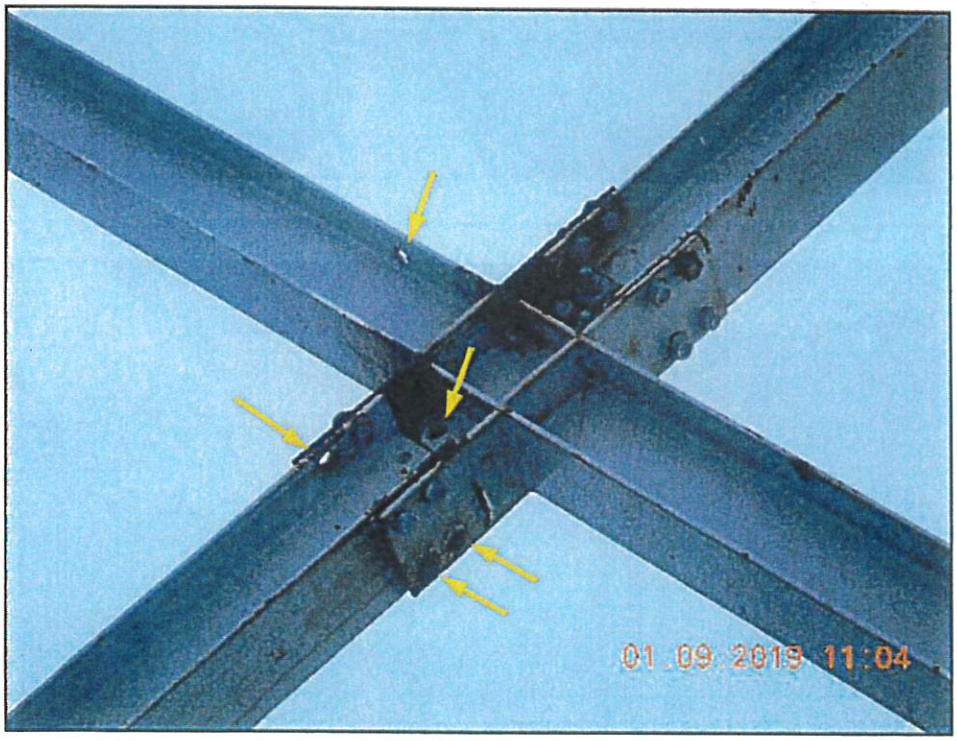


Figure 12: Missing Splice Bolts at X-Brace Connection (January 2019)

Supports for the conveyor and superstructure foundation were also observed with varying degrees of concrete spalling, cracking, and loose connections as shown in Figure 13 through Figure 15.



IM 22-023
RS 22-010

Figure 13: Concrete Damage at Onshore Backwall Conveyor Supports


Figure 14: Damaged Grout Pads at Platform Dock Supports, typ. (January 2019)



IM 22-023
RS 22-010

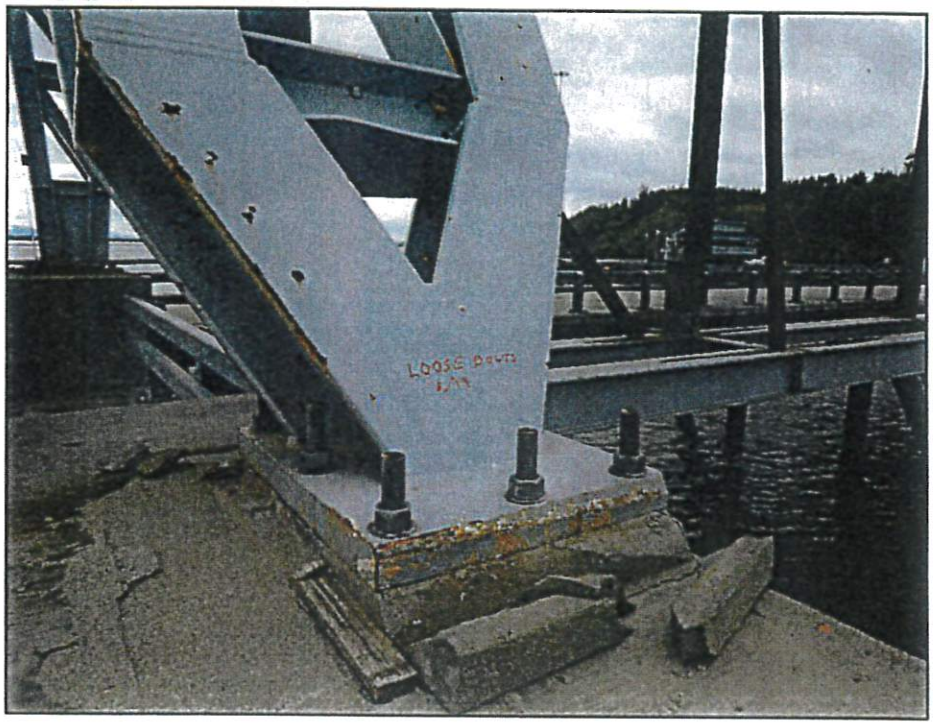


Figure 15: Loose Bolts on Anchor Supports, typ.

*Recommendations*

It is recommended that the deficient connections be repaired as soon as practical to ensure the structural integrity of the superstructure.

### 2.1.4 Brush Growth

Significant vegetative overgrowth was encountered at locations on site during the inspection. Identified deficiencies and subsequent recommendations are noted below.

*Deficiencies*

There is significant overgrowth of trees and brush around the reclaim and the downhill segments of the conveyor (Figure 16). Vegetation is growing into and through the conveyor infrastructure. Damage was observed on conveyor covers, but no other structural damage was observed due to the overgrowth at the time of inspection. Accessibility to the conveyor was inhibited by brush growth.



IM 22-023
RS 22-010

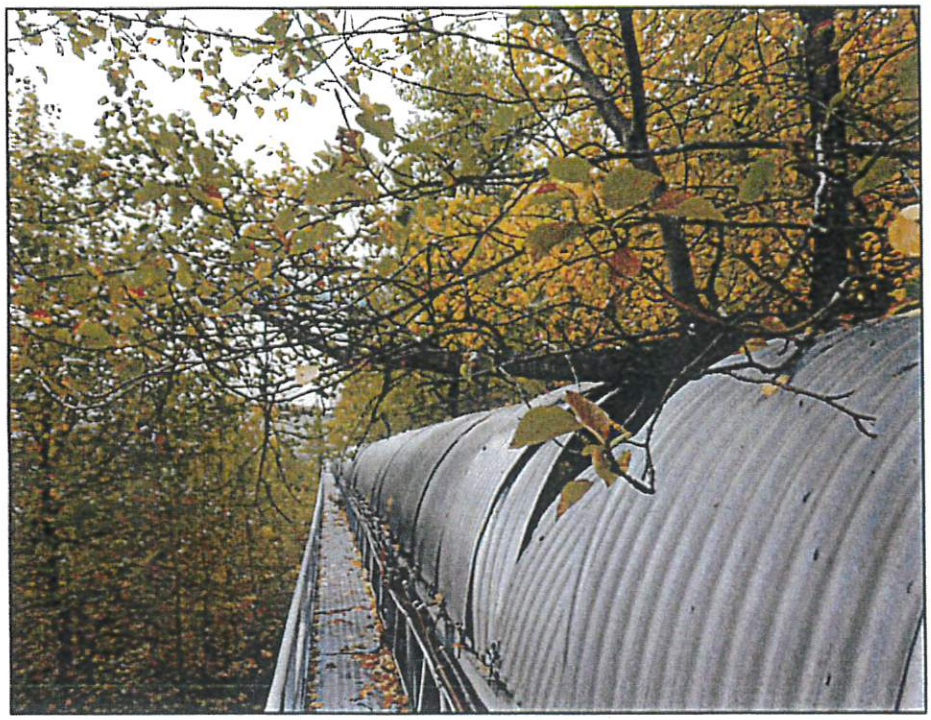

Figure 16: Brush Growth Along Downhill Conveyor Run

*Recommendations*

It is recommended that the brush below and adjacent to the conveyor infrastructure be removed to allow access to the system and to arrest any further damage to the facilities.

## 2.2 Mechanical Evaluation

Tim Holmberg, president and founder of DEMI, conducted the on-site inspection of the conveyor's mechanical components on September 30 and October 1 of 2019.

Access to certain portions of the conveyor system was restricted because of safety concerns due to structural failures as mentioned in Section 2.1. Specifically, access to much of the ship load-out system over the deep draft dock was restricted due to catwalk failures and therefore could not be inspected.

The mechanical components of the system appeared to be in complete and functional condition without obvious damages or deficiencies. Some conveyor rollers and V-belts may require routine replacement.

A detailed report from DEMI can be found in Appendix B.

## 2.3 Electrical Evaluation

Jim Spillman of Hunt conducted on-site inspection of the conveyor's electrical components September 16 and 17 of 2019.



IM 22-023
RS 22-010

Access to certain portions of the conveyor system was restricted because of safety concerns due to structural failures as mentioned in Section 2.1. Specifically, Dock Conveyor #1 and the Jet Slinger components were inaccessible due to catwalk failures and could not be inspected.

Overall, the system was found to be in fairly good condition. The reclaim area will require a number of minor replacements and maintenance/adjustments to electrical components, including fuses, switches, and cable-hanging clamps. Additionally, much of the TECK90 control cables and power cables were found to have been cut and removed from the site in what appears to be theft. The evaluation included testing motors, several of which yielded results indicating that repair or replacement may be required. One transformer on site near the reclaim will require repair or replacement.

A detailed report from Hunt can be found in Appendix C.

## 3.0 Cost Estimates and Valuations

ROM cost estimates for bringing the system into operational condition and a valuation of the existing conveyor system were developed by PND in conjunction with DEMI and Hunt.

The existing conveyor system can be retrofitted to support alternative material types. The Dakota Manufacturing conveyors (Conveyors A through E as detailed in DEMI's report in Appendix B) are adequate as existing to handle up to 12" minus aggregate. The reclaim and ship loadout portions of the conveyor system would require modifications to support aggregate.

The estimates and valuations developed account for the location of the system.

### 3.1 As-Is Fair Market Valuation

This valuation is based on the current condition of the conveyor system and does not account for any estimated repair costs to bring the system to operational status for the handling of material. The valuation also considers the location of the conveyor system and the costs associated with transportation and installation of a conveyor system of this kind and capacity in the State of Alaska. This valuation was developed by DEMI. See Appendix B for DEMI's detailed valuation.

**(As-Is) Conveyor Fair Market Valuation: $4,660,000**

Note that this valuation is site-specific to the current location of the system and does not include a cost for disassembly, shipment preparation, shipping, or erection of the system should it be relocated.



IM 22-023
RS 22-010

## 3.2 Cost Estimate for Repairs

A cost estimate for repairs required to bring the conveyor system to working order for handling woodchips was developed by PND in conjunction with DEMI and Hunt. See Appendices A, B, and C for the respective companies' detailed estimates.

| Company | Discipline | ROM Repair Cost Estimates |
|---|---|---|
| PND | Structural (~50% site-specific*) | $240,000 |
| DEMI | Mechanical | $130,000 |
| Hunt | Electrical | $120,000 |
| **Total Repair Cost of Existing System (~25% site-specific*)** | | **$490,000** |

*Site-specific component is comprised of upland support repairs and site drainage improvements, which may not be applicable if conveyor is moved off-site. See Appendix A for relocation cost estimates.

Costs are ROM estimates to bring the conveyor system and supporting infrastructure into operational condition. Estimates are based on observations made in the field and may not address deficiencies that were not observed due to restricted access or visibility. Actual costs may vary depending on the contractor's means and methods. These repair cost estimates take into account the current location of the system. Costs for shipment of replacement parts, mobilization and demobilization, and personnel may vary if the system were repaired at a different location (off-site).

## 3.3 Operational Fair Market Valuation for Woodchip Handling

This valuation is based on the As-Is Fair Market Valuation as presented in Section 3.2, with the recommended repair costs as shown in Section 3.1 accounted for, thereby providing a valuation estimate for the system on location and in operational condition for the handling of woodchips. This valuation was developed by PND in conjunction with DEMI and Hunt.

**(Operational) Conveyor Fair Market Valuation – Woodchips: $4,170,000**

Valuation is based on an operational system, where the recommended repairs estimated in Section 3.2 above have been completed.

Note that this valuation is site-specific to the current location of the system and does not include a cost for disassembly, shipment preparation, shipping, or erection of the system should it be relocated.

## 3.4 Cost Estimation for Retrofitting to Support Alternative Materials

Although the existing system was intended for woodchip use, the conveyor system can support other materials, with varying degrees of modification required. Cost estimates for modifications required to support coal and aggregate (up to 12" minus) were developed by PND and DEMI.



IM 22-023
RS 22-010

The Dakota Manufacturing conveyors (Conveyors A through E as detailed in DEMI's report in Appendix B) are capable of supporting a range of different materials, including woodchips, coal, and aggregate (up to 12" minus).

Based on DEMI's inspection of the system, the reclaim and ship loadout portions (unknown manufacturer) of the conveyor system would be capable of supporting coal conveyance but would require modifications for aggregate materials. Cost estimates for retrofitting the reclaim and ship loadout portions to support aggregate are detailed below.

### 3.4.1 Coal

Modifications to the existing system – including the reclaim and loadout facilities – are not anticipated to be required to support using the conveyor system for coal. However, additional operational maintenance costs may incur when using the system for coal conveyance.

Valuation is based on an operational system as valuated in Section 3.3, where the recommended repairs estimated in Section 3.2 above have been completed. Relocation costs are not accounted for in this valuation.

**Conveyor Valuation for Coal Operations: $4,170,000**

### 3.4.2 1" Minus Aggregate

Anticipated retrofitting of the existing system to support 1" minus aggregate would include ultra-high-molecular-weight (UHMW) lining or modification of the drop spot tube and transition hoppers. Additional operational maintenance costs may incur for aggregate use.

| Modifications to Support 1" Minus | ROM Cost Estimates |
|---|---|
| Drop Spot Tube Modification | $50,000 |
| Transition Hopper x 2 | $50,000 |
| **Total Cost of Retrofit (1" Minus)** | **$100,000** |

Valuation is based on an operational system as valuated in Section 3.3, where the recommended repairs estimated in Section 3.2 above have been completed. Relocation costs are not accounted for in this valuation.

**Conveyor Valuation with 1" Minus Aggregate Retrofit: $4,070,000**

### 3.4.3 8" Minus Aggregate

Anticipated retrofitting of the existing system to support 8" minus aggregate would include UHMW lining or modification of the drop spot tube and transition hoppers, as well as replacement of the chain feeder. Transition locations would require additional work to support the large aggregate, which



IM 22-023
RS 22-010

may include the addition of impact beds. Note that additional operational maintenance costs may incur for aggregate use.

| Modifications to Support 8" Minus | ROM Cost Estimates |
|---|---|
| Drop Spot Tube Modification | $50,000 |
| Transition Hopper x 2 | $50,000 |
| Chain Feeder | $350,000 |
| Transition Location Modifications and Misc. | $50,000-$300,000 |
| **Total Cost of Retrofit (8" Minus)** | **$500,000-$750,000** |

Valuation is based on an operational system as valuated in Section 3.3, where the recommended repairs estimated in Section 3.2 above have been completed. Relocation costs are not accounted for in this valuation.

**Conveyor Valuation for 8" Minus Aggregate Retrofit: $3,420,000-$3,670,000**

### 3.4.4 12" Minus Aggregate

Anticipated retrofitting of the existing system to support 12" minus aggregate would include UHMW lining or modification of the drop spot tube and transition hoppers, as well as replacement of the chain feeder. Transition locations would require additional work to support the large aggregate, which may include the addition of impact beds. Note that additional operational maintenance costs may incur for aggregate use.

| Modification to Support 12" Minus | ROM Cost Estimates |
|---|---|
| Drop Spot Tube Modification | $50,000 |
| Transition Hopper x 2 Modification | $50,000 |
| Chain Feeder | $350,000 |
| Transition Location Modifications and Misc. | $50,000-$300,000 |
| **Total Cost of Retrofit (12" Minus)** | **$500,000-$750,000** |

Valuation is based on an operational system as detailed in Section 3.3, where the recommended repairs estimated in Section 3.2 above have been completed. Relocation costs are not accounted for in this valuation.

**Conveyor Valuation for 12" Minus Aggregate Retrofit: $3,420,000-$3,670,000**



IM 22-023
RS 22-010

## 3.5 Disassembly, Shipment Preparation, and Shipment Costs

ROM disassembly, shipment preparation, and shipment costs for the entire conveyor system consisting of both the Dakota Equipment conveyors and the reclaim and ship loadout facilities from Homer were developed by PND in conjunction with DEMI. The disassembly, shipment preparation, and shipment preparation cost estimate is based on an estimated 1.5 months of labor for a five- or six-man crew with crane support. Shipment is estimated by barge transport from Port MacKenzie to the West Coast of the United States.

| Task | ROM Cost Estimates |
|---|---|
| Disassembly and Shipment Prep. | $750,000-$1,000,000 |
| Shipping to West Coast USA | $500,000-$750,000 |
| **Total Cost of Relocating** | **$1,250,000-$1,750,000** |

Site remediation costs at Port MacKenzie, such as removal of the CMP tunnel, upland foundations, the downhill conveyor support pile, and the feeder retaining wall, are not included in this estimate for disassembly, shipment preparation, and shipment.

**Conveyor Valuation Repaired and Relocated: $2,790,000-$3,290,000**

This repaired and relocated valuation is based on the as-is system as valuated in Section 3.1, with repair estimates accounted for per the relocation option (see Appendix A) and disassembly, shipment preparation, and shipping costs as presented above.



IM 22-023
RS 22-010

# APPENDIX A

## PND Engineers, Inc. Cost Estimate

# APPENDIX B

## Dakota Equipment Manufacturing Inc. Inspection Report and Cost Estimate



IM 22-023
RS 22-010

# APPENDIX C

## Hunt Electric, Inc. Inspection Report and Cost Estimate



IM 22-023
RS 22-010

December 27, 2019

## NPI Ship-Loading Conveyor System – Port MacKenzie, AK

## On-Site Inspection Summary:

**Reclaim – Chain Feeder (manufacturer unknown)**

- All Mechanical components appeared to be complete and functional without any damages or missing items. Structural integrity appeared to be in original satisfactory condition for operation as is. There didn't appear to be any necessary expense other than routine maintenance and fresh oil/lubrication changes from setting to rid the internal gearing components of moisture contamination. Electric was vandalized on this specific item so all electrical components to be evaluated and checked by others. Once Feeder is electrically functional it would be recommended to complete temperature readings on all moving components for excessive heat and noticeable failures.

**Reclaim Discharge Conveyor – Safety Screen Feed (manufacturer unknown)**

- All Mechanical components appeared to be complete and functional without any damages or missing items. Structural integrity appeared to be in original satisfactory condition for operation as is. There didn't appear to be any necessary expense other than routine maintenance and fresh oil/lubrication changes from setting to rid the internal gearing components of moisture contamination. Excessive Brush/Tree Growth will be required to make safe for operation as well as some detached conveyor wind hoods will need reattachment. Once Conveyor is electrically functional it would be recommended to complete temperature readings on all moving components for excessive heat and noticeable failures, some V-Belts will likely need changed after live run testing has been completed.

**Safety Screen – Disk Screen (manufacturer unknown)**

- All Mechanical components appeared to be complete and functional without any damages or missing items. Structural integrity appeared to be in original satisfactory condition for operation as is. There didn't appear to be any necessary expense other than routine maintenance and fresh oil/lubrication changes from setting to rid the internal gearing components of moisture contamination. Excessive Brush/Tree Growth will be required to make safe for operation. Once Screen is electrically functional it would be recommended to complete temperature readings on all moving components for excessive heat and noticeable failures.

**Conveyor A – Screen Discharge (Dakota Fabricating)**

- All Mechanical components appeared to be complete and functional without any damages or missing items. Structural integrity appeared to be in original satisfactory condition for operation as is. There didn't appear to be any necessary expense other than routine maintenance and fresh oil/lubrication changes from setting to rid the internal gearing components of moisture contamination. Excessive Brush/Tree Growth will be required to make safe for operation as well as some detached conveyor wind hoods will need reattachment. Once Conveyor is electrically functional it would be recommended to complete temperature readings on all moving components for excessive heat and noticeable failures, some V-Belts will likely need changed after live run testing has been completed.



IM 22-023
RS 22-010

**Conveyor D – Downhill Regen (Dakota Fabricating)**

- All Mechanical components appeared to be complete and functional without any damages or missing items. Structural integrity appeared to be in original satisfactory condition for operation as is. There were noticeable support structural damages 75% of the distance down the slope that will need attention, however this damage does not affect the conveyor for making it inoperable as it currently sits. There didn't appear to be any necessary expense other than routine maintenance and fresh oil/lubrication changes from setting to rid the internal gearing components of moisture contamination. Excessive Brush/Tree Growth will be required to make safe for operation as well as some detached conveyor wind hoods will need reattachment. Once Conveyor is electrically functional it would be recommended to complete temperature readings on all moving components for excessive heat and noticeable failures, some V-Belts will likely need changed after live run testing has been completed. It would be strongly recommended that this specific conveyor would benefit from having a factory trained representative from **"Wichita Clutch and Brake"** present during any type of initial Start-Up in order to properly re-certify any required functionality details or recommended safety aspects of this very important safety component.

**Conveyor C – Tunnel (Dakota Fabricating)**

- All Mechanical components appeared to be complete and functional without any damages or missing items. Structural integrity appeared to be in original satisfactory condition for operation as is. There didn't appear to be any necessary expense other than routine maintenance and fresh oil/lubrication changes from setting to rid the internal gearing components of moisture contamination. Some detached conveyor wind hoods will also need reattached. Once Conveyor is electrically functional it would be recommended to complete temperature readings on all moving components for excessive heat and noticeable failures, some V-Belts will likely need changed after live run testing has been completed.

**Conveyor B – Portable/Radial (Dakota Fabricating)**

- All Mechanical components appeared to be complete and functional without any damages or missing items. Structural integrity appeared to be in original satisfactory condition for operation as is. There didn't appear to be any necessary expense other than routine maintenance and fresh oil/lubrication changes from setting to rid the internal gearing components of moisture contamination. Some rollers seemed a bit stiff due to not having the "Wind Covers" installed but will likely be fine once back operating however we are recommending that a small number of Spare Parts Idlers be ordered for backup. It is also recommended that these "Wind Covers" be found on the property or replacements ordered for future operation. Once Conveyor is electrically functional it would be recommended to complete temperature readings on all moving components for excessive heat and noticeable failures, some V-Belts will likely need changed after live run testing has been completed.

**Conveyor E – Portable/Radial (Dakota Fabricating)**

- All Mechanical components appeared to be complete and functional without any damages or missing items. Structural integrity appeared to be in original satisfactory condition for operation as is. There didn't appear to be any necessary expense other than routine maintenance and fresh oil/lubrication changes from setting to rid the internal gearing components of moisture contamination. Some rollers seemed a bit stiff due to not having the "Wind Covers" installed but will likely be fine once back operating however we are recommending that a small number of Spare



IM 22-023
RS 22-010

Parts Idlers be ordered for backup. It is also recommended that these "Wind Covers" be found on the property or replacements ordered for future operation. Once Conveyor is electrically functional it would be recommended to complete temperature readings on all moving components for excessive heat and noticeable failures, some V-Belts will likely need changed after live run testing has been completed.

**Ship Loading Conveyor System – Deep Draft Dock (manufacturer unknown)**

- All Mechanical components appeared to be complete and functional without any damages or missing items. There was a few misaligned Gravity Take-Up Pulleys due to what appeared to be possible loosened bearings at the shaft surface connection allowing them to travel off their intended center points. Structural integrity of the conveyor frame appeared to be in original satisfactory condition for operation for the portions we were provided clear accessibility, about 50% of this system. The remaining 50% was all off limits due to earlier structural failures that made catwalk accessibility inoperable and dangerous. There didn't appear to be any necessary expense other than routine maintenance and fresh oil/lubrication changes from setting to rid the internal gearing components of moisture contamination. Once Conveyor is electrically functional it would be recommended to complete temperature readings on all moving components for excessive heat and noticeable failures, some V-Belts will likely need changed after live run testing has been completed.

## Cost Estimate for required repairs to bring back to working order:

This estimate or evaluation for these repairs was not fully completed as we were not able to see any part of the system operational so that leaves many items normally checked in a one, two, and eight-hour test cycle untested and therefore unaccounted for. A physical inspection of components where accessible was conducted per an average to provide enough quantifiable proof that the component is ether likely or not likely operable for at least a 10-day minimal replaceable time period or complete failure occurs. I have determined an estimated value of **$130,000.00** but not limited to minimal replace and repairs that covers everything described in my Summary Reports above or per my recommendations as we have witnessed it being. This estimate does not include any excessive Brush/Tree Growth removal or anything else for what was not accessible for physical viewing while on location, nor anything electrically associated such as Electrical Motors, Wiring, and or Switchgear/Controls. This estimate also does not include any major component items such as Gear Reducers or Conveyor Belting, however both these items appeared to be in excellent condition throughout the system from what we could observe.

**Table 1: Cost Estimate for Repairs Required for Operation**

| ITEM | DESCRIPTION | Unit | TOTAL COST |
|---|---|---|---|
| **1.0** | **Recommended Replacement** | | |
| 1.1 | Idlers for portable conveyors | lump sum | $10,000.00 |
| 1.2 | Misc. V-Belts throughout | lump sum | $4,000.00 |
| 1.3 | Gear Oil Changes throughout | lump sum | $10,000.00 |
| 1.4 | Oil Waste Disposal | lump sum | $4,000.00 |
| 1.5 | Bearing Replacement were required | lump sum | $10,000.00 |
| **2.0** | **Specialty Services Required** | | |



IM 22-023
RS 22-010

| | | | |
|---|---|---|---|
| 2.1 | Downhill Conveyor Brake System Re-Commissioning | lump sum | $10,000.00 |
| **3.0** | **On-Site Labor Services** | | |
| 3.1 | 4qty Service Technicians 5-weeks @ 40hr | lump sum | $65,000.00 |
| 3.2 | Service Foreman/Project Management - oversight supervision | lump sum | $17,000.00 |
| **TOTAL** | | | **$130,000.00** |

## As-Is Valuation for entire Loadout System including Electrical and Current Installation Estimate:

This As-Is estimate considers the current resources of both New and Used Equipment dealer Published Prices, Private Sale - Auction Market, and New Process Manufacturing Rates. It also considers current Location and Installation estimating values as well as relocation costs considerations for Used Market Resale values. **$4,660,000.00**

**Table 2: As-Is Valuation**

| ITEM | DESCRIPTION | Unit | TOTAL COST |
|---|---|---|---|
| **1.0** | **Tunnel** | | |
| 1.1 | CMP Tunnel and Transfer Box | lump sum | $60,000.00 |
| **2.0** | **Conveyor** | | |
| 2.1 | Dakota | $600 per linear foot | $1,020,000.00 |
| 2.2 | Homer | $2000 per linear foot | $1,200,000.00 |
| **3.0** | **Conveyor Cover** | | |
| 3.1 | Dakota | $100 per linear foot | $170,000.00 |
| 3.2 | Homer | $100 per linear foot | $90,000.00 |
| **4.0** | **Loadout** | | |
| 4.1 | Homer Reclaim Feeder | lump sum | $300,000.00 |
| 4.2 | Homer Reclaim Conveyor | $400 per linear foot | $120,000.00 |
| 4.3 | Homer Disk Screen | lump sum | $45,000.00 |
| **5.0** | **Electrical Package** | | |
| 5.1 | Dakota | lump sum | $650,000.00 |
| 5.2 | Homer | lump sum | $350,000.00 |
| **6.0** | **Value Considerations** | | |
| 6.1 | Current Location Value | lump sum | $105,000.00 |
| 6.2 | Installation Value | lump sum | $550,000.00 |
| **TOTAL** | | | **$4,660,000.00** |



IM 22-023
RS 22-010

# APPENDIX C

## Hunt Electric, Inc. Inspection Report and Cost Estimate



IM 22-023
RS 22-010

HUNT ELECTRIC, INC.

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October 14, 2019

Doug Kenley, P.E.
PND Engineers
1506 W. 36th Ave,
Anchorage, AK 99503

RE – Port Mackenzie Initial Report

Doug,

Here is my initial report for Port Mackenzie. After this, I can put together budgetary pricing for the repair work as mentioned in the report, along with pricing to commission and get the system back up and running. If you want me to provide some type of valuation for the entire system, please advise.

Port Mackenzie

Job # 4519399 - Inspection Project

RECLAIM AREA

The Reclaim Area is where we noticed the most problems with the system. Tech 90 control cables and power cables were cut and removed from the job site in what looks like a wire theft. Pictures 001 through 006 show the cut cables in different areas. The result will be approximately 300 feet of replacement for most of these cables. A few cables are short and located in the feeder area only.

- 14/25 Tech 90 cable from the Feeder to just next to the Disc Screen stairs and walkway.
- 10/8 Tech 90 cable from the feeder to just next to the Disc Screen stairs and walkway.
- 10/3 Tech 90 cable from junction box to junction box at feeder. (less than 10 feet)
- 1/3 Tech 90 cable from Feeder motor to the Disc Screen stairs and walkway.
- 14/4 Tech 90 cable from Feeder to just next to the Disc Screen stairs and walkway.
- 10/4 Tech 90 Cable from Feeder to just next to the Disc Screen stairs and walkway.

All Tech 90 cables listed above, would have to be replaced and re-attached to the belt line for the entire distance. Rather than replace cables from the Disc Screen Stairs and walkway back to the Reclaim control trailer, a junction box would be installed, and distribution termination provided for the transition from old cables to new cables.

Except for two light fixtures that need replaced above the Feeder Deck the only other recommendations would be for typical maintenance of safety pull cords, belt alignment switches and belt speed sensors on all components including the decline belt. There are minor maintenance items such as cable hanging clamps that need to be repositioned and tightened and pull cords that need realigned and slack removed.



IM 22-023
RS 22-010

There appears to be a speed control pendant that was most likely installed by others during the coal loading project. This pendant is on the disc screen deck and is full of water. I can only assume that a person was stationed at the disc screen while coal was being ran through it. They were controlling the speed of the feeder from that position, rather than down at the control room at the dock. If this is a component to be used again then it should be replaced in a more permanent manner, otherwise it should be removed.

Last but certainly not least the overgrowth in that area does make it difficult to clearly access and work on all components. Harvey did quite a bit of clearing so we could access the areas we needed at the time. But back by the 4160 transformer the access is difficult at best.

RECLAIM MCC TRAILER

The trailer itself is in very good condition. Door locks and hardware are understandably stiff and could use maintenance. Interior was clean and dry. All electrical components within the trailer are in excellent condition. There was virtually no sign of corrosion or moisture. There are a few signs of rodents but very light. Growth around the trailer is an ongoing problem. Here are the items that would need some attention.

- The Scale House and the Truck Dump breakers have been locked out previously by others. Those cables have been disconnected sometime in the past when the truck dump and scale house were moved. We were unable to locate where the disconnected ends of the cables were. This could be because of overgrowth. A locator would probably have to be used to find them at this point. (Note that the hydraulic motor has been removed from the truck dump hydraulic pump.)
- Reclaim Belt #1, has two blown 300-amp fuses. It appears that the fuses were bypassed so that the belt could still be used. These would need to be replaced and put back to original. See photo #007. I don't have an opinion as to why they were blown but the fact that they were bypassed would cause me to assume that it was ran after they bypassed the fuses. Probably in order to finish a loadout.
- Both Regenerative Variable Frequency Drives look to be in good shape. However, these would need to be powered up to perform diagnostics on them. Note that when large VFD's have been without power for a long period of time the drives should be slowly taken from 0 volts, to their rated voltage, so as not to damage components. (mostly on-board capacitors)
- The Cutler Hammer Regenerative drives were designed and commissioned by an outside source. During the initial power up of the project, Cutler Hammer Representatives were present for this set up process. Because of the time these drives have been powered down, we would recommend that a Cutler Hammer Representative be present at the next start up to re-commission these drives.
- The Allen Bradley SLC 500 PLC appears to be in good condition. However, with no power we could not confirm its functionality. The PLC rack at the Reclaim is a remote I/O rack configured with an Adapter card to communicate with the Dock PLC.



IM 22-023
RS 22-010

As a part of our discovery we performed an ohm test and megger test on all motors in the Reclaim area. We used a Fluke meter for both measurements and introduced 1051 volts into each phase of each motor for the megger test. My personal rule of thumb for motor readings is that if you are reading less than 12 meg (phase to ground), your motor life is limited. Above 12 meg is ok for non-critical motors, but 12 meg is not a hard line. If you have a critical motor and it appears to be heading towards that lower reading, then it should be repaired or replaced. The results are below. All readings are in Ohms.

- Reclaim #2 Motor – Test Passed
  - A-B - .6 Ω  A to GND  1 Gig Ω
  - A-C - .6 Ω  B to GND  1 Gig Ω
  - B-C - .6 Ω  C to GND  1 Gig Ω
- Reclaim #1 Motor – Motor should be isolated from Feeder cable and retested. If result is the same or similar, then motor should be sent to motor shop for repair or replacement.
  - A-B - .4 Ω  A to GND  23 Meg Ω
  - A-C - .4 Ω  B to GND  23 Meg Ω
  - B-C - .4 Ω  C to GND  23 Meg Ω

- Disc Screen - Test Passed
  - A-B - 1.6 Ω  A to GND  1 Gig Ω
  - A-C - 1.8 Ω  B to GND  1 Gig Ω
  - B-C - 1.6 Ω  C to GND  1 Gig Ω
- #2 Decline Belt - Test Passed
  - A-B - .5 Ω  A to GND  1.2 Gig Ω
  - A-C - .5 Ω  B to GND  2.2 Gig Ω
  - B-C - .5 Ω  C to GND  2.2 Gig Ω
- #1 Decline Belt - Motor should be isolated from Feeder cable and retested. If result is the same or similar, then motor should be sent to motor shop for repair.
  - A-B - .5 Ω  A to GND  14.8 Meg Ω
  - A-C - .5 Ω  B to GND  14.3 Meg Ω
  - B-C - .5 Ω  C to GND  14.8 Meg Ω

DOCK AREA

Disclaimer – at the time of our visit, access to Dock Conveyor #1 along with the Jet Slinger and all its components was determined by PND Engineers to not be safe. Those areas were closed off to us during this inspection. This would be the area most affected by corrosion. The only thing that we could accomplish with this portion of the project was to megger the motors from the Motor Control Center.

In general, most components on the dock were in excellent condition. The Control Trailer is clean, dry and there are no signs of corrosion. The Control Trailer has settled slightly, but not enough to be concerned and no electrical is being affected. The Control Room is in generally good shape. It does show some signs of corrosion in a few small areas but is otherwise in reasonable shape.



IM 22-023
RS 22-010

The Control Room is where the main CPU of the PLC resides. This PLC communicates via remote I/O to the Dock Trailer and the Reclaim Trailer. The memory is battery backed with 5-year lithium battery. I am assuming that with no power on, there is a good chance that the program is no longer present or valid. This would have to be re-downloaded and tested. A copy of that program is supposed to be on site stored on a thumb drive. I did not see that storage device there. However, we do have a copy of that program on file.

There are many small maintenance items that would be expected for a system that has been in place for 15 years. All pull cords, belt alignment switches, speed switches and emergency stops will need to be cleaned, lubed and tested.

Other items that will need attention:

- Dock Conveyors 3A and 3B are fitted with male and female cord sets for ease of removal or relocating. The plugs are made of a malleable iron material that is has considerable corrosion and cannot easily be taken apart and cleaned. These plugs should be replaced.
- Dock Conveyors 3A and 3B are also fitted with 10 Pin Harting control plugs and receptacles. One set of these was not properly stored and will need to be replaced.
- The Jet Slinger remotes are on site. Both appear to be in good condition. Batteries however should be replaced. They are custom batteries from the manufacturer and should be available.
- Wire cable supports in a several places will need to be re-secured and tightened.

The biggest problem that we found on the Dock is the 500 KVA, 4160V/480V 3 phase transformer. This transformer boosts 480-volt power from the dock to 4160-volt power, and then travels up to the reclaim area. Then it is tied to another transformer at the Reclaim to take it back down to 480 Volts. The transformer cooling fins corroded heavily and leaked all the Mineral Oil out on the ground. We will investigate options of repair or replacement for this.

We also megger tested each of the motors on the dock with the same method as the Reclaim motors. Those results are as follows:

- Ship Loading Conveyor – Test Passed
  - A-B - .9 Ω  A to GND  136 Meg Ω
  - A-C - .9 Ω  B to GND  136 Meg Ω
  - B-C - .9 Ω  C to GND  136 Meg Ω
- Jet Slinger – Test Passed
  - A-B - .6 Ω  A to GND  92 Meg Ω
  - A-C - .6 Ω  B to GND  92 Meg Ω
  - B-C - .6 Ω  C to GND  92 Meg Ω



IM 22-023
RS 22-010

- Dock Conveyor #1 – Imbalance in readings on the phase to phase test of this motor, will require it to be isolated and retested. If result is the same or similar, then motor should be sent to motor shop for repair or be replaced.
  - A-B – 2.6 Ω A to GND 247 Meg Ω
  - A-C – 3.6 Ω B to GND 1.2 Gig Ω
  - B-C – 1.8 Ω C to GND 1.2 Gig Ω
- Winch – Test Passed
  - A-B - 1.3 Ω A to GND 244 Meg Ω
  - A-C - 1.3 Ω B to GND 251 Meg Ω
  - B-C - 1.3 Ω C to GND 251 Meg Ω
- Jet Slinger Bypass – Test Passed
  - A-B – 42.5 Ω A to GND 153 Meg Ω
  - A-C - 42 Ω B to GND 153 Meg Ω
  - B-C - 42 Ω C to GND 153 Meg Ω
- Jet Slinger Slew – Test Passed
  - A-B – 42 Ω A to GND 70 Meg Ω
  - A-C - 42 Ω B to GND 70 Meg Ω
  - B-C - 42 Ω C to GND 70 Meg Ω
- Jet Slinger Hoist – Test Passed
  - A-B – 6 Ω A to GND 73 Meg Ω
  - A-C - 6 Ω B to GND 73 Meg Ω
  - B-C - 6 Ω C to GND 73 Meg Ω
- Jet Slinger Rotate – Motor should be isolated from Feeder cable and retested. If result is the same or similar, then motor should be replaced.
  - A-B – 60 Ω A to GND 400 K Ω
  - A-C - 60 Ω B to GND 400 K Ω
  - B-C - 60 Ω C to GND 400 K Ω
- Doc Conveyor #2 – Test Passed
  - A-B – .6 Ω A to GND 91 Meg Ω
  - A-C - .6 Ω B to GND 91 Meg Ω
  - B-C - .6 Ω C to GND 91 Meg Ω
- Dock Conveyor #4 – Test Passed
  - A-B – .4 Ω A to GND 192 Meg Ω
  - A-C - .4 Ω B to GND 192 Meg Ω
  - B-C - .4 Ω C to GND 192 Meg Ω
- Dock Conveyor #3A – Motor should be isolated from Feeder cable and retested. If result is the same or similar, then motor should be replaced.
  - A-B – .6 Ω A to GND 900 K Ω
  - A-C - .6 Ω B to GND 700 K Ω
  - B-C - .6 Ω C to GND 600 K Ω



IM 22-023
RS 22-010

- Dock Conveyor #3B – Motor should be isolated from Feeder cable and retested. If result is the same or similar, then motor should be replaced.
  - A-B – 1.6 Ω  A to GND  6.4 Meg Ω
  - A-C - 1.6 Ω  B to GND  9.5 Meg Ω
  - B-C - 1.6 Ω  C to GND  8.3 Meg Ω

Overall, I feel like the entire system is in pretty good shape. There are a few areas of concerns noted above. Mainly closer look at questionable motor readings, the replacement of the stolen Tech 90 cables along with resolution of the dock 4160 Transformer.

Please advise as to anything further that you might need.

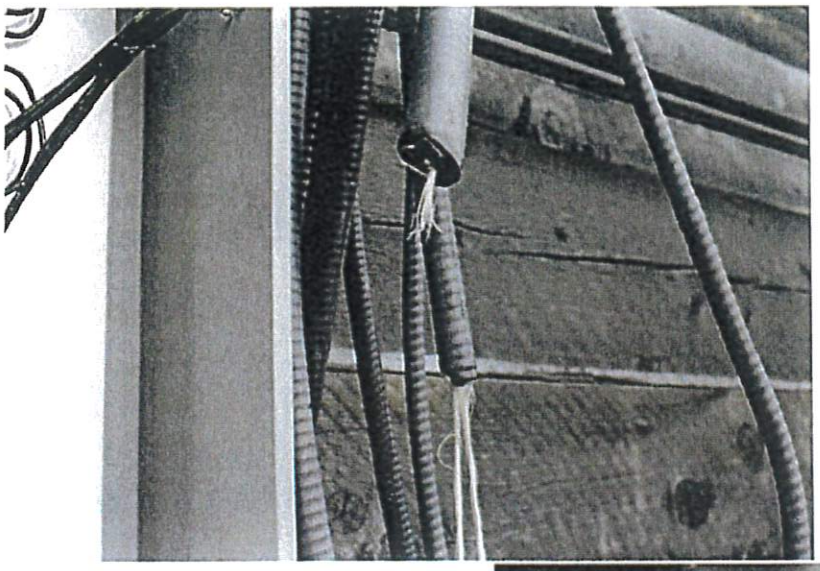
Best Regards,

Jim Spillman
Automation/Controls Division Manager

HUNT ELECTRIC, INC.
INDUSTRIAL AUTOMATION & CONTROLS



IM 22-023
RS 22-010



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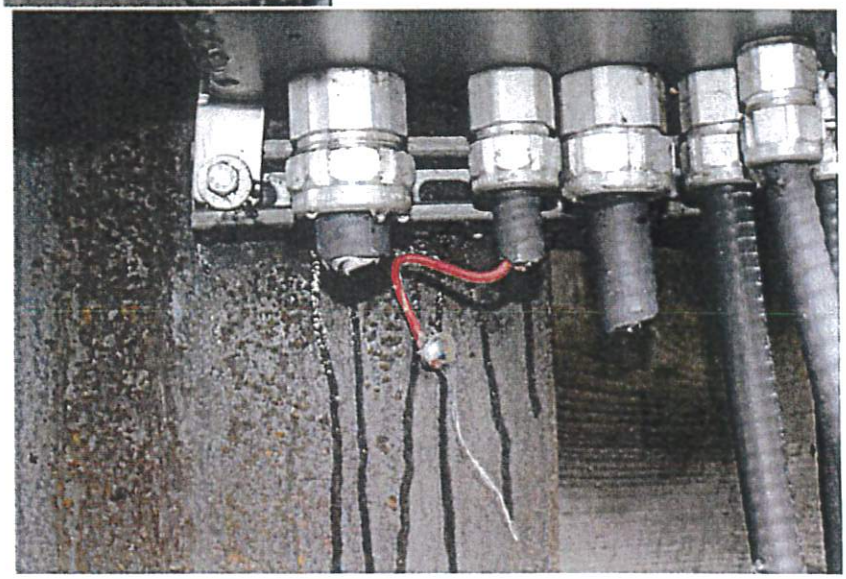

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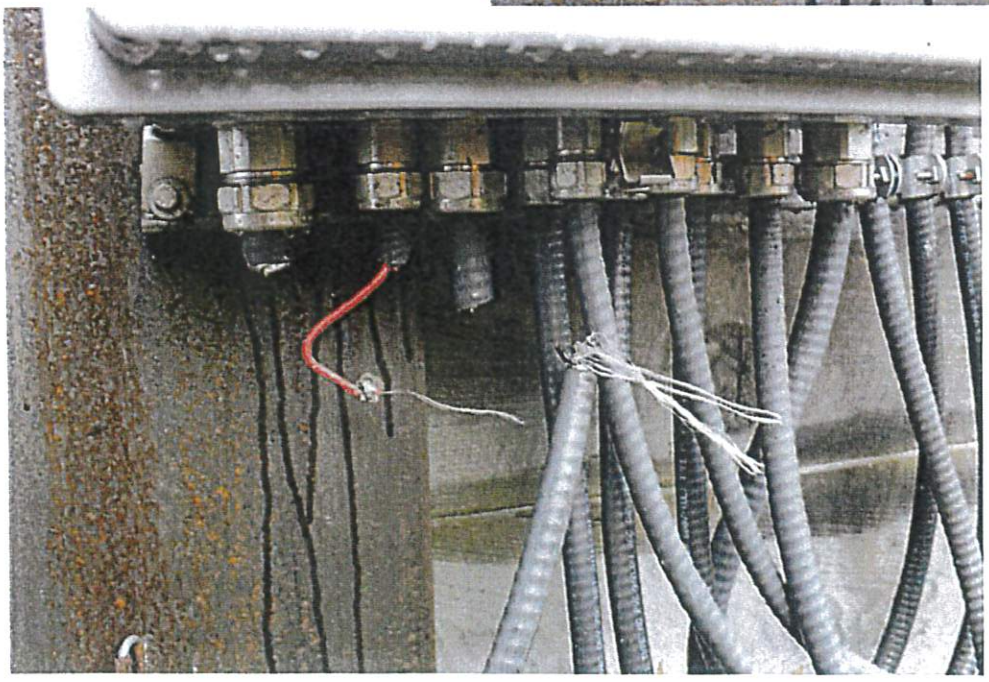

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RS 22-010

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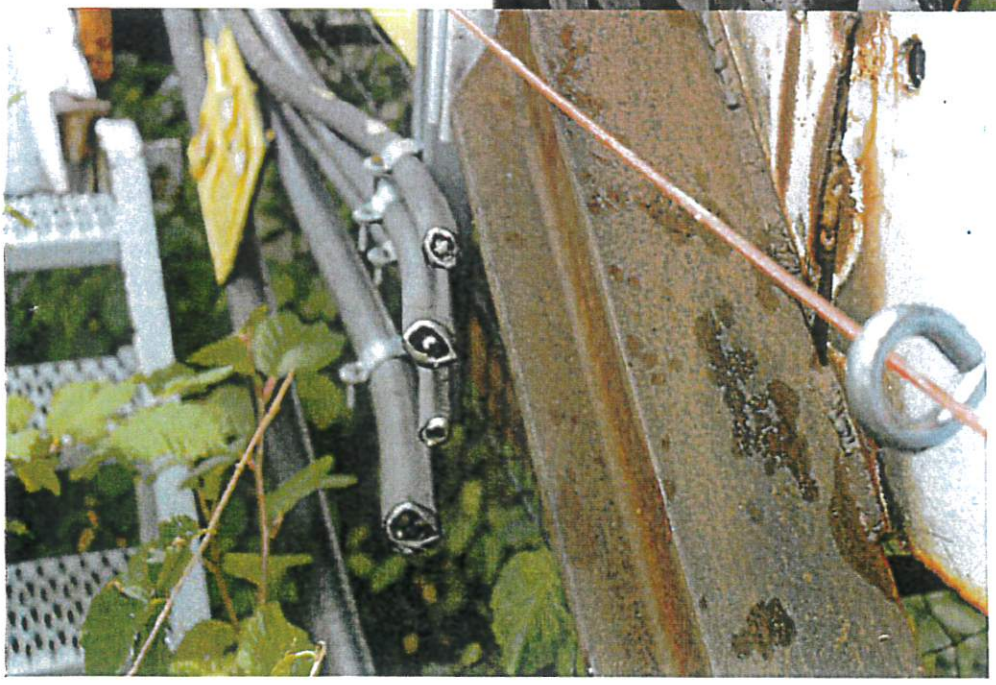

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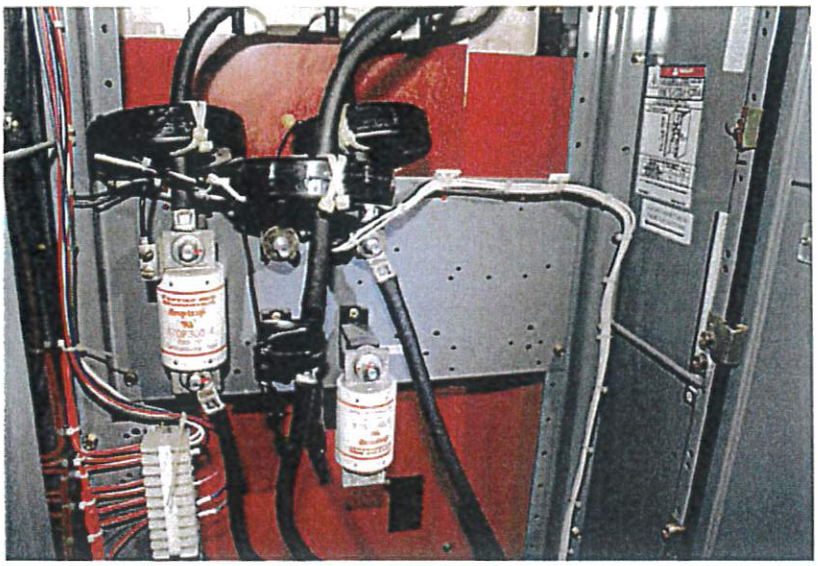
RS 22-010



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IM 22-023
RS 22-010

HUNT ELECTRIC, INC.

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November 1, 2019

Doug Kenley, P.E.
PND Engineers
1506 W. 36th Ave,
Anchorage, AK 99503

RE – Port Mackenzie Project

Doug,

Hunt Electric is pleased to give you a price of $118,733.00 for the work described below. I have done this as a budget price not to exceed. I have also given you a cost breakout matrix below to give you a little more detail. My description is lengthy, but I think you'll appreciate understanding where the costs lie. I will also give you some Value Engineering ideas towards the end.

| ITEM | SUB ITEM | DESCRIPTION | BUDGET AMOUNT |
|---|---|---|---|
| 6.1 | | **Electrical Labor / Travel / Expenses** | |
| | 6.11 | Straight time, Over time, Travel | $ 23,720.00 |
| | 6.12 | Per Diem, Mileage, Motel, Rental Car, Airfare | $ 12,108.40 |
| | 6.13 | Freight for Gang box, Transformer, Wire, Motors | $ 11,000.00 |
| | 6.14 | Rental incl. pickup and delivery for Ext. reach Fork lift, man lift and 20' Conex | $ 4,955.50 |
| 6.2 | | **Materials, Supplies etc.** | |
| | 6.21 | Tech 90 Cable | $ 9,829.76 |
| | 6.22 | Reclaim Supplies, Devices, Materials | $ 5,875.81 |
| | 6.23 | Motors | $ 24,666.77 |
| | 6.24 | 5 Kv Transformer | $ 20,686.93 |
| | 6.25 | Dock Supplies, Devices, Materials - Includes new ship remote batteries | $ 5,889.16 |
| | | | $ 118,732.33 |

Hunt Electric will provide 4 men with the following targeted schedule and description of work. The 4 men includes a Foreman and three Tech 1 level electricians. Crew will stay in Wasilla during this project. Will only plan on working 8-hour days.

Rates are as follows:

Foreman - Hourly Rate $110.00 OT $140.00 Travel $40.00
Tech 1 - Hourly Rate $85.00 OT $110.00 Travel $40.00
Per Diem $75.00 per person per day
Mileage $0.75 per mile (approximately 40 miles from Anchorage to Wasilla and 40 from Wasilla to jobsite.)
Vehicle, Equipment, Storage, Motel and Airline tickets/fees - Cost plus 10%
Materials are cost plus Trade Services

Prior to mobilizing the project – motors, transformer, wire and misc. materials will be ordered and shipped to Port Mackenzie. A Conex from Anchorage will be delivered to Port Mackenzie to safely store all these shipments until time of installation. Freight offloading by Matanuska-Susitna Borough employees that are present on site. An extended reach forklift and all terrain 45-foot man lift, will be



IM 22-023
RS 22-010

rented just prior to Hunt Electric's arrival and kept on site the duration of Hunt Electric's presence. The forklift will be used to maneuver materials on the job site, replace the transformer and replace motors as needed. All equipment and storage will be picked up after Hunt Electric leaves.

- Sunday (Day 1) - Travel SLC to Anchorage – Rental car and travel to Wasilla
- Monday (Day 2) – Job site orientation, safety meeting, job specific training, job walk, job launch. Disconnect and remove 5kv Transformer. Set new transformer in place.
- Tuesday (Day 3) – 2 men on 5kv power distribution system, tie in new transformer, 5lv connection cleaning, metering, isolate all motors and devices, power up and test as needed. 2 men on motors. Isolate, test and change as needed.
- Wednesday (Day 4) – 2 men on motors – 2 men on Reclaim wire pull and replacement
- Thursday (Day 5) – 2 men on motors – 2 men on Reclaim wire pull and replacement, Begin System Maintenance – limits, sensors, remote E Stops, pull cables, etc. Begin control system start up and test.
- Friday (Day 6) – 4 men wrap up work, replace Harting control plugs, Belts 3A and 3B power plugs, replacement lights at Reclaim, program check and download as needed, trace scale and truck dump cables and mark. Replace fuses and test drive on Reclaim Belt #1 and wire back in. Install new batteries and check out Control Chief transmitters and receiver.
- Saturday (Day 7) – Complete plant start up and test. Job clean up and prep shipments out.
- Sunday (Day 8) – Travel Anchorage to SLC

Note: Rental equipment will be scheduled for pick up from Port MacKenzie after day 8

Clarifications:

- Cutler Hammer drive recommissioning not included – After further investigation, at this time we feel confident that the drives will not need to be recommissioned. Hunt Electric will bring them up to full voltage in a manner conducive to protecting the capacitors in each drive. Unless something abnormal is found, the drives are expected to perform well. If after power up the drives are determined to need recommissioning, then a quote for that would be given.
- Price is based on work during fair weather conditions
- Price is based on all tasks being done during one trip to Port Mackenzie
- Price based on current copper prices
- Price good for 30 days with changing market prices
- Price is based on access to all areas being free and clear, and deemed to be safe
- Price is based upon the schedule listed above
- Any other changes in conditions of equipment, power distribution, control systems since the time of inspection will be dealt with on a T&M change order.

Value Engineering:

There are several considerations for Value Engineering that can be discussed once a work determination is reached. The following are some of those considerations we are mindful of up front.



IM 22-023
RS 22-010

- Price was based on replacing all motors that are questionable. But after testing further on site and opening and disconnecting motors, we could find that significantly less quantities would need to be replaced. These are however all critical motors so having a spare on hand is a viable option. Waiting to try and find motors or to have them rebuilt while we are on site would result in job delays, so I think it is best to have new motors there for replacement.
- Once a PO is given for the work, Hunt Electric will arrange for more information on the individual motors showing problems. A solid quote will be given and is expected to be less than the amount given in the breakouts for the initial budget. The original budget is based on all motors being standard frame motors for the HP size and all motors being heavy duty crusher rated.
- Freight costs included were ballpark from suppliers. Once actual freight is ordered a solid price will be given and is expected to be less.
- Freight costs for motors and transformer are high because of weight and shipping from the lower 48. Once PO is given for the work, an attempt will be made to purchase motors and transformer out of Anchorage to save on freight costs.
- Lighting replacement was quoted in LED rather than the older Metal Halide style. Even though the fixtures are nearly double in cost, the cost to maintain will make up for it over the years. But lighting could go back to Metal Halide to see a cost savings.

Let me know if this is what you are looking for. We look forward to working with you on this project.

Best Regards,

Jim Spillman
Automation/Controls Division Manager

HUNT ELECTRIC, INC.
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