



Baffinland Iron Mines LP Mary River Expansion Project

Construction Summary Report: Sailiivik Camp Effluent Line

PERMIT TO PRACTICE

HATCH ATD.

Signature Market

PERMIT NUMBER: P 512

The Association of Professional Engineers, Geologists and Geophysicists of NWT/NU



2020-04-15	0	Approved for	G. Peace	Michael Diste: 2020.04.15 15.20.02 M. Haaksma	N. Mason	D. Henkelman
Date	Rev.	Use Status	Prepared By	Checked By	Approved By	Approved By





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Effluent Pumping Station and Effluent Line E353004-CX001-130-124-0009 Nuna Job File 3804-023 CVR-041 Mine Site Treated Effluent Pumping Station Turn Over

Appendix C

Contact Information as per Components 1 and 2 of the Commercial Lease Requirement

Appendix D

Map to Show Construction in Relation to Lease Boundaries and Water Bodies





1. Facility Description

1.1 Purpose and Design Basis

Baffinland Iron Mines Corporation (Baffinland) has added a new accommodation camp at the Mary River mine site (Sailiivik camp). In conjunction with the new camp a new effluent pumping station and effluent discharge line was added. The new effluent line ties in to the existing effluent line from the existing Mine Site Complex camp. The effluent discharge point is unchanged.

The effluent pumping station and discharge line is designed to accommodate the effluent from the Sailiivik camp as well as the effluent that results from the waste water from various remote locations that is discharged into the camp Waste Water Treatment Plant (WWTP).

The effluent line is a 76 mm (3 inch) heat traced and insulated high-density polyethylene (HDPE) pipe line.

The pumping station and effluent line were designed and constructed to the following codes and standards:

- National Building Code of Canada (NBC) 2010.
- National Fire Code of Canada (NFCC) 2010.
- ANSI B31.3-2010.
- Nunavut Mine Health and Safety Act.
- Nunavut Mine Health and Safety Regulations.
- Nunavut Electrical Protection Act.
- Nunavut Electrical Protection Regulations

1.2 Location and Base Elevations

The new Sailiivik camp is located on the south side of the Tote Road between northing N7913230 and N7913466, and easting E560487 and E560815. The effluent pumping station is located near the east edge of the camp pad. The new effluent line extends to the southeast where it meets the existing effluent line at northing N7912430 and easting E561906.

1.3 Geometry and Access

The effluent pumping station is accessible from the Sailiivik Camp roadways and the effluent line is accessible from existing roads.

1.4 Earthworks Materials Details

The effluent pumping station was constructed on the Sailiivik camp pad. The effluent line follows the existing ground contours.





2. Construction Activity Summary

Construction activities for the effluent line and pumping station started November 2, 2018 and were completed on November 18, 2019.

The following summarizes construction activities:

2.1 Pumping Station

- Placement of the container.
- Installation of interior tank heater.
- Installation of pumps and piping in the container.
- Modification of the container to allow room for controls and better access.
- Installation of electrical supply.

2.2 Effluent Line

- Placement of 3" heat traced and insulated HDPE pipe sections along route.
- Fusing HDPE piping.
- Installation of four (4) culverts for the pipeline. These culverts were for pipeline installation and not for flow of water.
- Connection of heat tracing at each joint.
- Covering joints with insulated jackets.
- Cutting into existing line and installing Y connection with valves.

2.3 Testing

Testing completed on the pumping station and effluent line as shown in Appendix B.

3. QA/QC

Quality Assurance (QA) was performed by the Hatch Construction Supervisor during daily audits with the Nuna/ADCO Supervisor during the construction. Quality Surveillance Inspection Acceptance and Sign-off Reports were prepared by the Nuna Supervisor and signed of by the Hatch Representative. Quality reports are included in as part of the turnover package Appendix B.





4. Photographic Records



Photo 4-1: Effluent Line



Photo 4-2: Effluent Line Continuing Installation





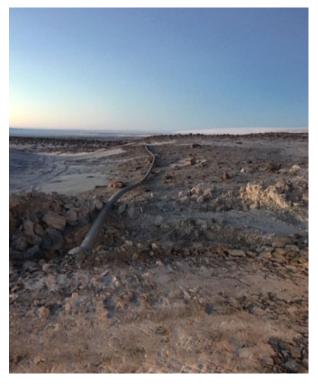


Photo 4-3: Effluent Line Installation



Photo 4-4: Effluent Line Installation in Progress







Photo 4-5: Effluent Line placed up to Effluent Tank



Photo 4-6: Insulation Kit at Tank







Photo 4-7: Effluent Line Pipe Supports



Photo 4-8: Effluent Line Supports







Photo 4-9: Effluent Line Heat Tracing



Photo 4-10: Tie into Existing Line







Photo 4-11: Insulation Box at Tie in



Photo 4-12: Effluent Line Heat Tracing







Photo 4-13: Existing Effluent Line Discharge Point



Photo 4-14: Effluent Pump Station Layout







Photo 4-15: Effluent Pumps Installation



Photo 4-16: Effluent Pump Station Piping







Photo 4-17: Pump Station Control Panel



Photo 4-18: Pump Station Cable Tray





5. As-built Drawings

The as-built drawings incorporate contractor red line markups, field instructions, requests for information, field sketches and all other inputs provided by the Engineering, Procurement and Construction Management (EPCM) field team. As-built drawings are attached in Appendix A. These drawings are representative of the final as-built conditions.

Table 5-1: As-built Drawing List

Drawing Number	Title	Revision
H353004-10000-240-272-0001-0001	Mine Site Mine Effluent and Raw Water	
	Pipeline Overall Layout	2
AB 190912 MS Effluent Pipe.dwg	Mine Site Insulated Heat Traced Effluent Pipe	
	As Built Sept 12, 2019	
H353004-10000-270-276-0003-0002	Mine Site Sewage Water Treatment	
	Piping and Instrumentation Diagram	0
J2775-PD-1 SHT. No.1	Pump control/Power Panel	
	Wiring Diagram (Page 1 of 2)	4
J2775-PD-1 SHT. No.2	Pump control/Power Panel	
	Wiring Diagram (Page 2 of 2)	4
J2775-PD-1 SHT. No.3	Pump Control Panel	
	Layout	2
J2775-PD-1 SHT. No.4	Pump Control Panel	
	Terminal Strip Details	2
J2775-PD-1 SHT. No.5	Pump Control Panel	
	Door Layout Details	2
J2775-PD-1 SHT. No.6	Pump Control Panel	
	Layout Drawing	2
	Mary River Mine Site	
	1623-Effluent Pump Station Single Line	

6. Field Decisions

The following section describes field decisions made during construction:

Modification of container to improve access and allow proper installation of controls.

7. Performance Evaluation

As of the date for this report there have been no adverse observations in operational performance of the work constructed under this scope. There was a small leak at the discharge of one of the effluent pumps. This occurred prior to being put into operation.

8. Vibration Monitoring and Quarrying Activity

No vibration monitoring was conducted during the construction of this work as it was not deemed necessary based on the scope of activities required for construction.





9. Environmental Monitoring

Baffinland Environment was responsible for environmental monitoring at the site during this work and following-up with construction if there were any reported environmental incidents or non-conformances.

The Spill contingency Plan (BAF-PH1-830-P16-0036), in conjunction with the Emergency Response Plan (BAF-PH1-830-P16-0007), provides guidance and instructions for first responders and Baffinland Management in the event of a spill event or other emergency such as fire or accident.

The risks to the environment as a result of construction activity for this work would originate from spills from equipment. There were no spills reported.

10. Earthworks Data

No Earthworks/Geotechnical investigations were performed in association with this work.

11. Unanticipated Observations

A small leak occurred at the discharge of one of the effluent pumps during testing. It was repaired immediately with no spill to the environment.

12. Surface Monitoring

Not applicable.

13. Required Maintenance

Non required.

14. Adaptive Management

Not applicable.





15. Concordance with Type "A" Water Licence

Baffinland's Type A Water Licence, Schedule D, outlines the requirements for Construction Summary/Monitoring Reports. Table 15-1 provides a concordance of this report with the requirements of Schedule D.

Table 15-1: Concordance with Type "A" Water Licence

Schedule D Item No.	Schedule D Description	Corresponding Section in this Report
1a	Description of all infrastructure and facilities designed and constructed to contain, withhold, divert or retain Water and/or Waste;	1
1b	A summary of construction activities including photographic records before, during and after construction of the facilities and infrastructure designed to contain, withhold, divert or retain Water and/or Waste;	2, 3, 4
1c	As-built drawings and design for facilities and infrastructure, in Item 1(a) of this schedule, designed and constructed to contain, withhold, divert or retain Water and/or Waste;	5
1d	Documentation of field decisions that deviate from the original plans and any data used to support or developed facilities and infrastructure to withhold, divert or retain Water and/or Waste;	6
1e	A comparison of measured versus predicted performance of infrastructure and facilities;	7
1f	Any blast vibration monitoring and control for quarrying activity carried out in close proximity to fish bearing waters;	8
1g	Monitoring conducted for sediment and explosives residue release from construction areas;	9
1h	Monitoring undertaken in accordance with Part D of Licence the during the Construction Phase of the Project;	8, 9
1i	Details confirming that the requirements of the CCME guidance document entitled "Aboveground Storage Tank Systems for Petroleum and Allied Petroleum Products (2003)" have been met by the Licensee;	N/A
1j	Data collected from instrumentation used to monitor earthworks and the interpretation of that data;	10
1k	A discussion of any unanticipated observations including changes in risk and mitigation measures implemented to reduce risk during construction;	11
11	An overview of any method including frequency used to monitor deformations, seepage and geothermal responses;	12
1m	A summary of maintenance work undertaken as a result of settlement or deformation of dikes and dams;	N/A
1n	A summary of adaptive management principles and practices applied during the relevant phases of the Project and their overall effectiveness.	14





16. Concordance with Commercial Lease Requirements

Table 16-1 provides a concordance of this report with the requirements of the Commercial Lease for As-Built reporting.

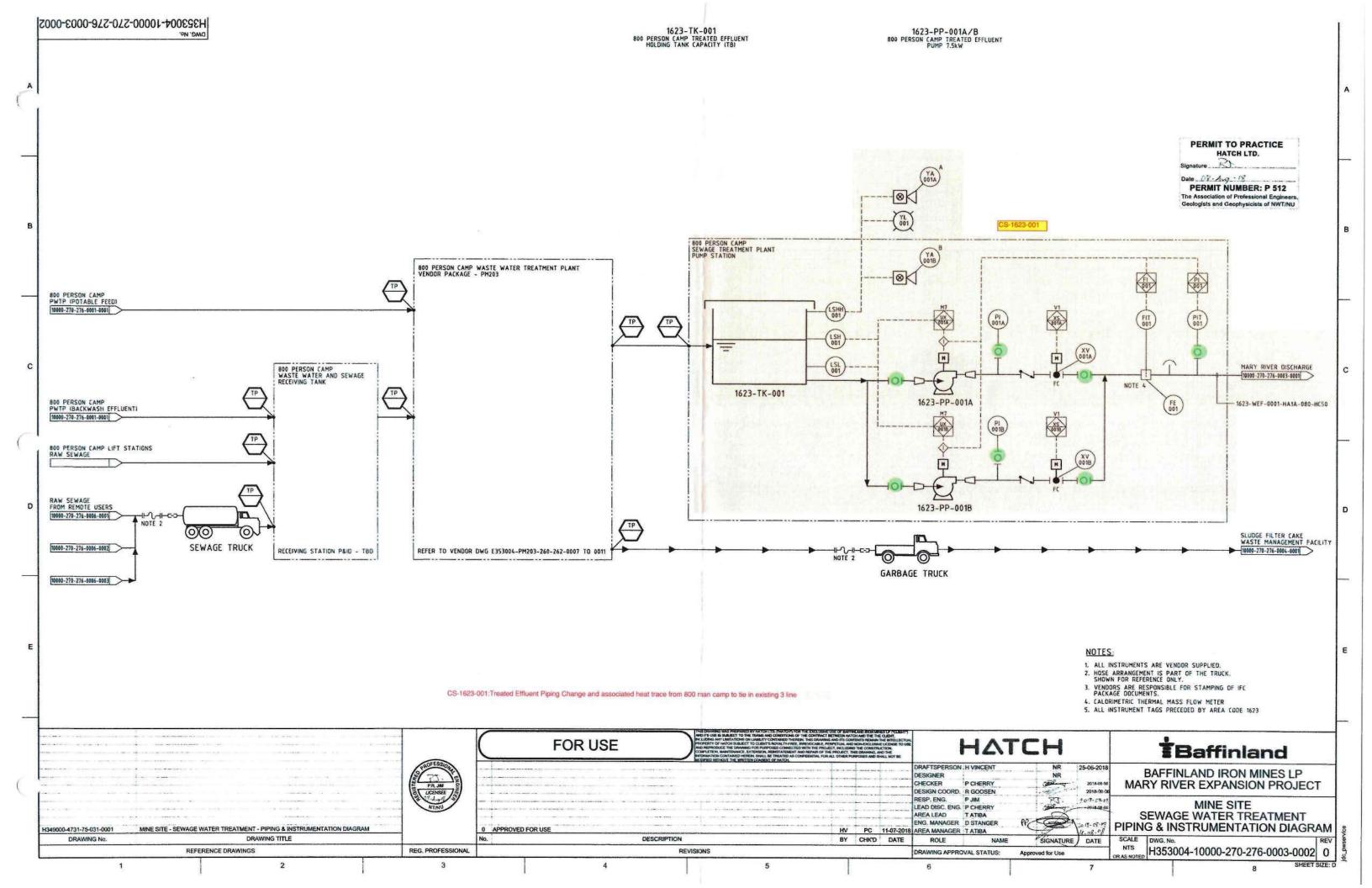
Table 16-1: Concordance for Commercial Lease As-built Requirements

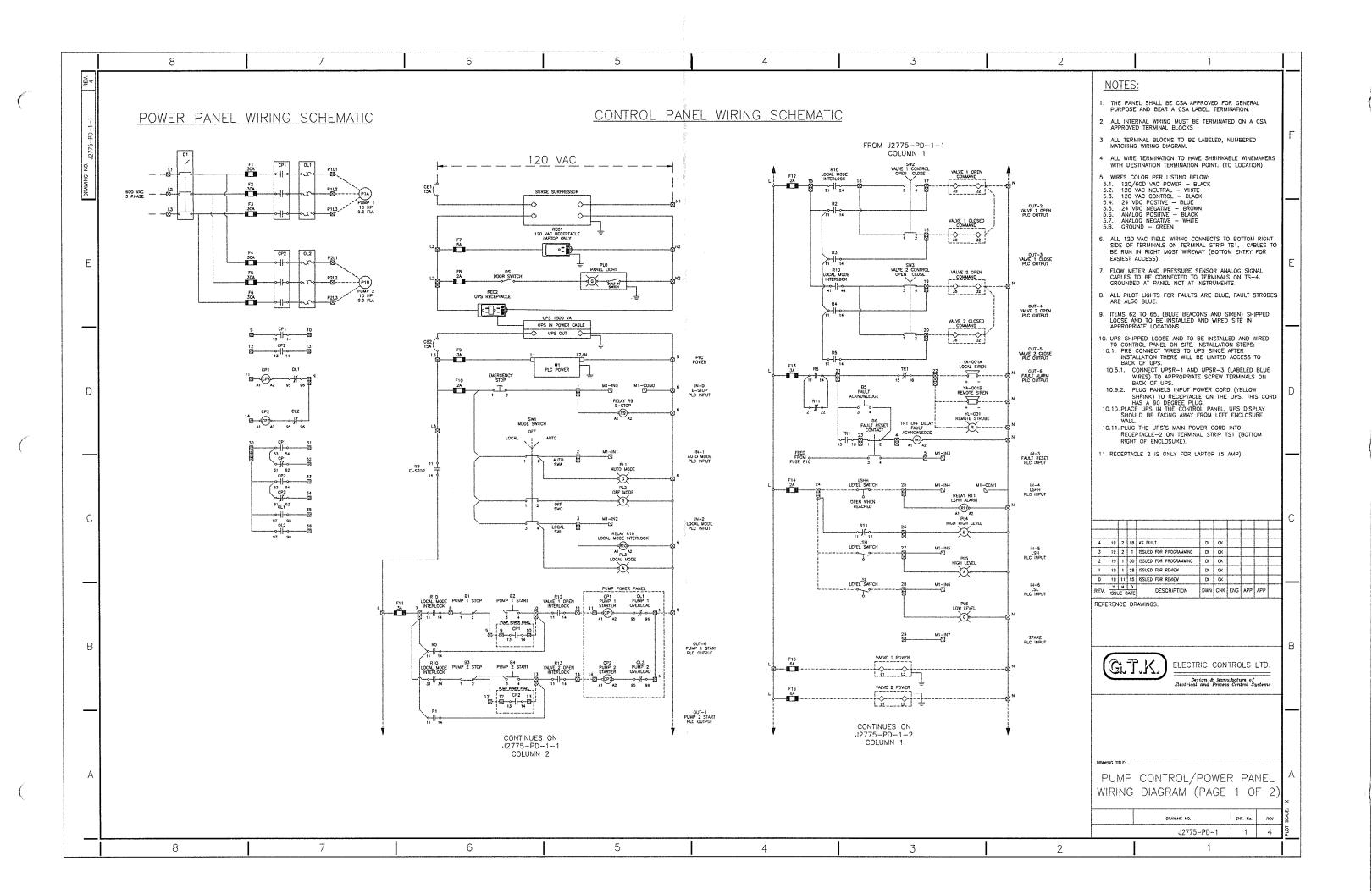
Component	Minimum Information Requirements	Corresponding Section in this Report
1	The name and contact information of the person and company responsible for completing the construction, construction monitoring and preparing the As-built Report	Appendix C
2	The name and contact information of the Baffinland representatives(s) that QIA can contact should it have any questions or comments regarding the As-built Report	Appendix C
3	An introduction to the infrastructure or facilities including but not limited to the construction background, concept and construction history	1,2
4	Construction records including As-Built drawings signed and stamped by a professional engineer detailing surveys, planar and cross sections that illustrate all designed components. This should be provided in PDF format and if requested the native file (e.g. CAD, .dxf, etc.)	Appendix A Appendix B
5	Detailed description of any deviations from the For Construction Design. Deviations that should be noted include, but are not limited to, changes in design and construction materials, construction methodology or monitoring	6
6	Observed performance of the construction including a comparison to predicted performance. Recommendations for performance monitoring based on observations during construction if applicable	NA
7	A description and list of instrumentation installed, if applicable, and results of construction monitoring including all environmental data. Recommendations for additional performance or environmental monitoring based on observations and monitoring results, if applicable.	NA
8	A summary of quality assurance testing results, if applicable, and comparison of these results to construction/design requirements to ensure performance of the infrastructure or facilities.	3 Appendix B
9	A summary of adaptive management principles and practices related to environmental management and monitoring applied during the relevant phases of the Project and their overall effectiveness	NA
10	Photographic records before, during and after construction of the facilities or infrastructure.	4
11	Map(s) to illustrate the completed construction in relation to Lease boundaries and water bodies. The minimum distance from completed or modified facilities and infrastructure to the surveyed boundary of the Property, surveyed boundary of the Impact Area, and the original high water mark should be provided.	Appendix D

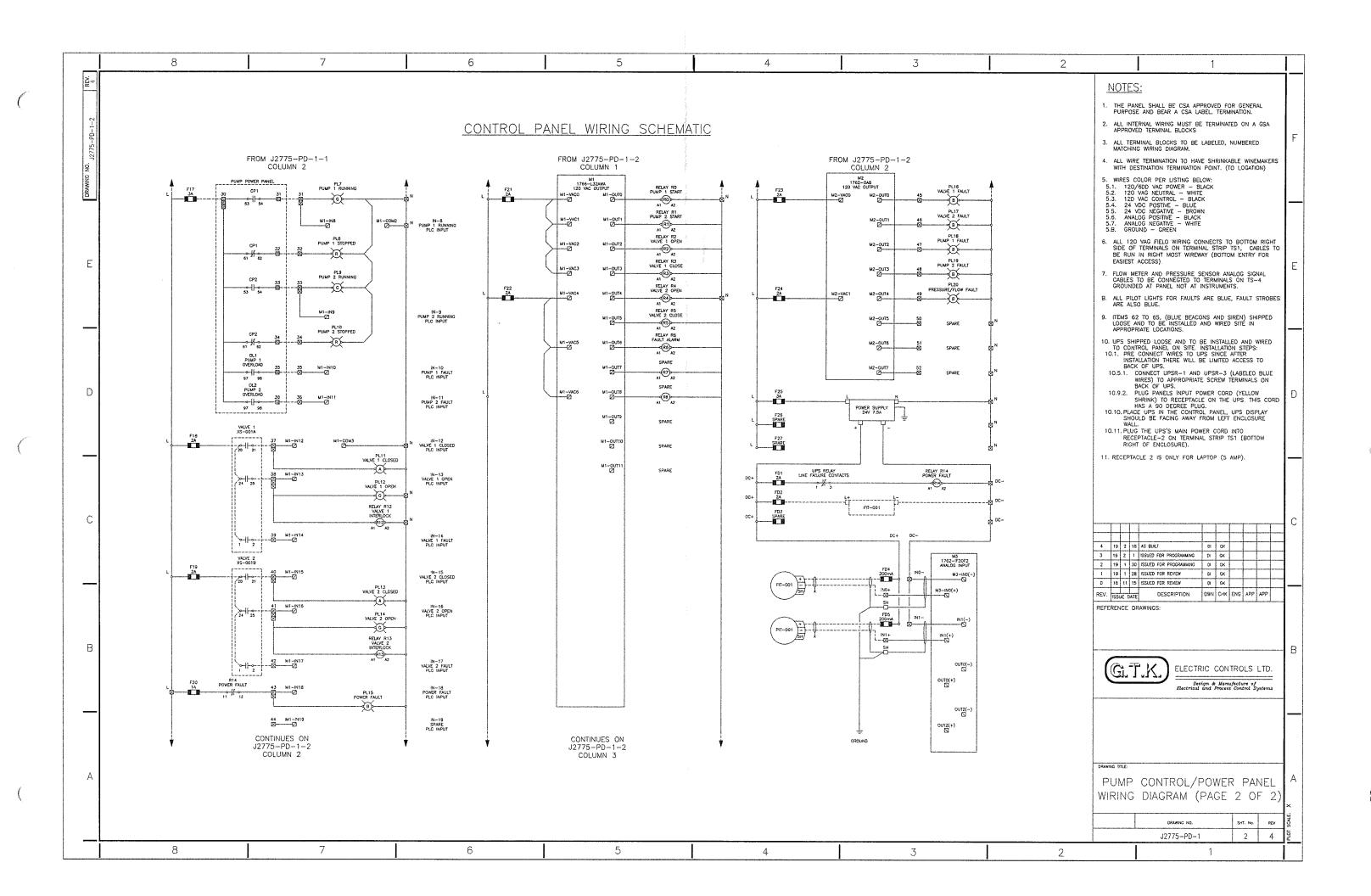


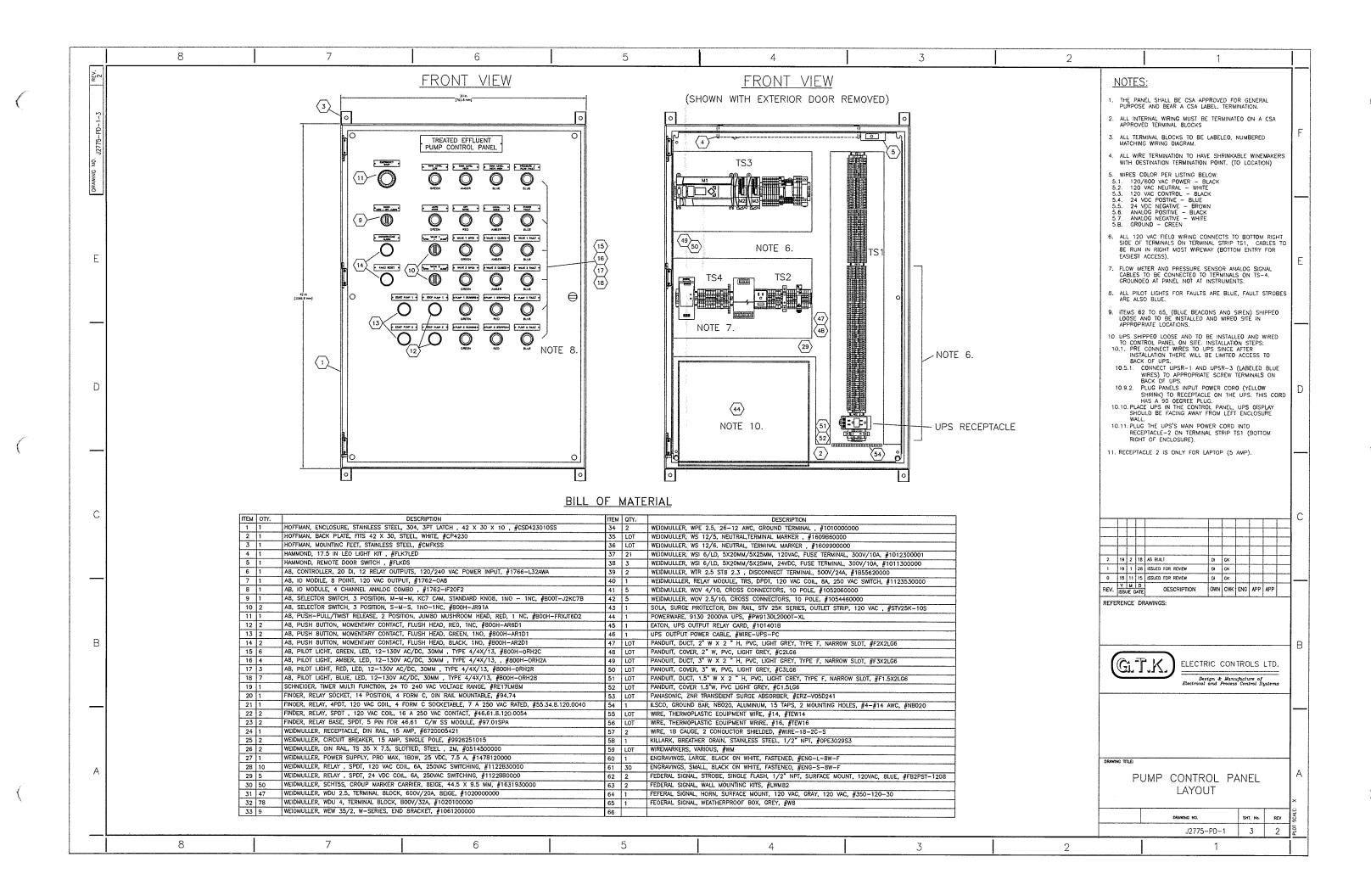


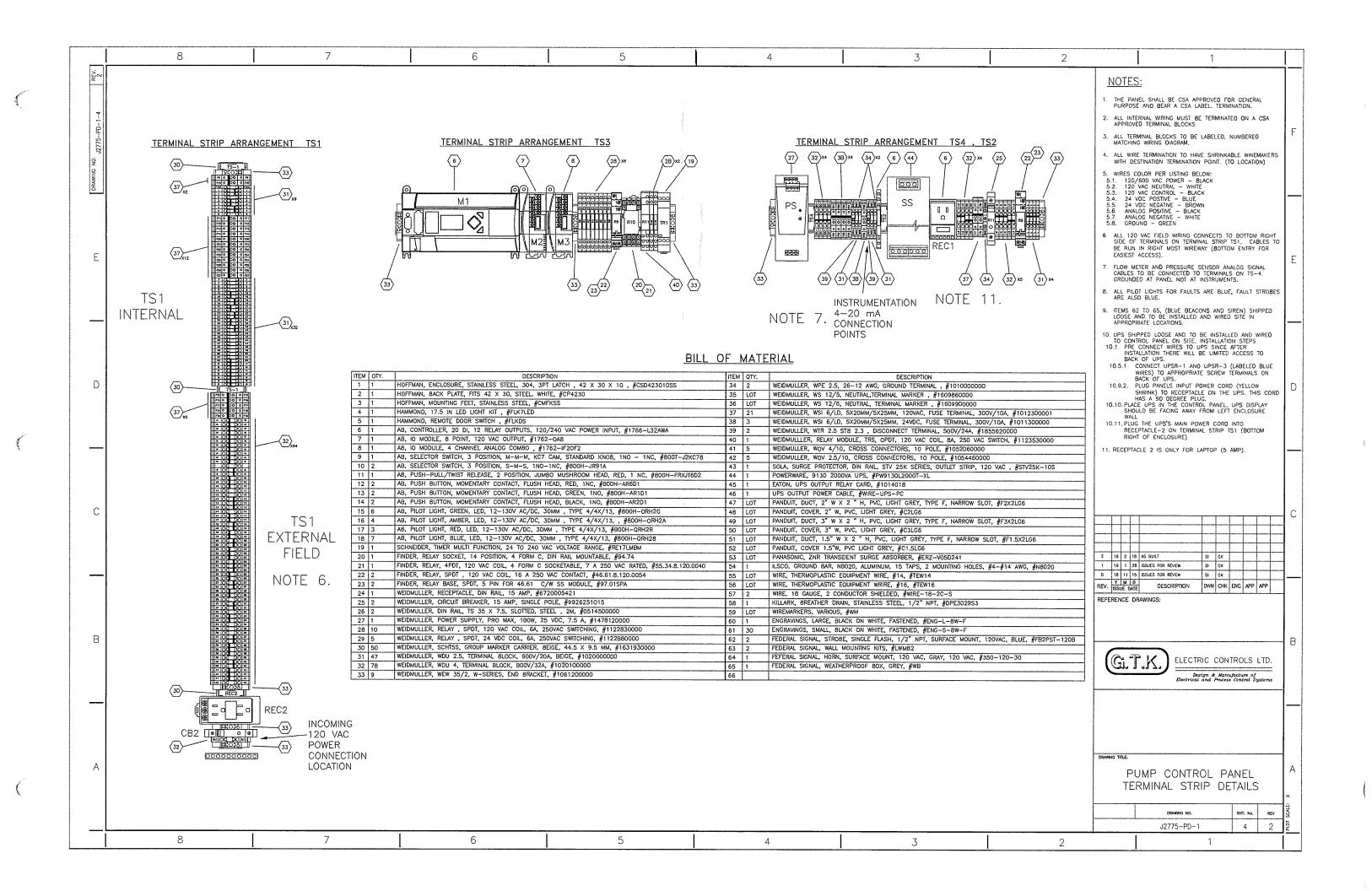
Appendix A As-built Drawings

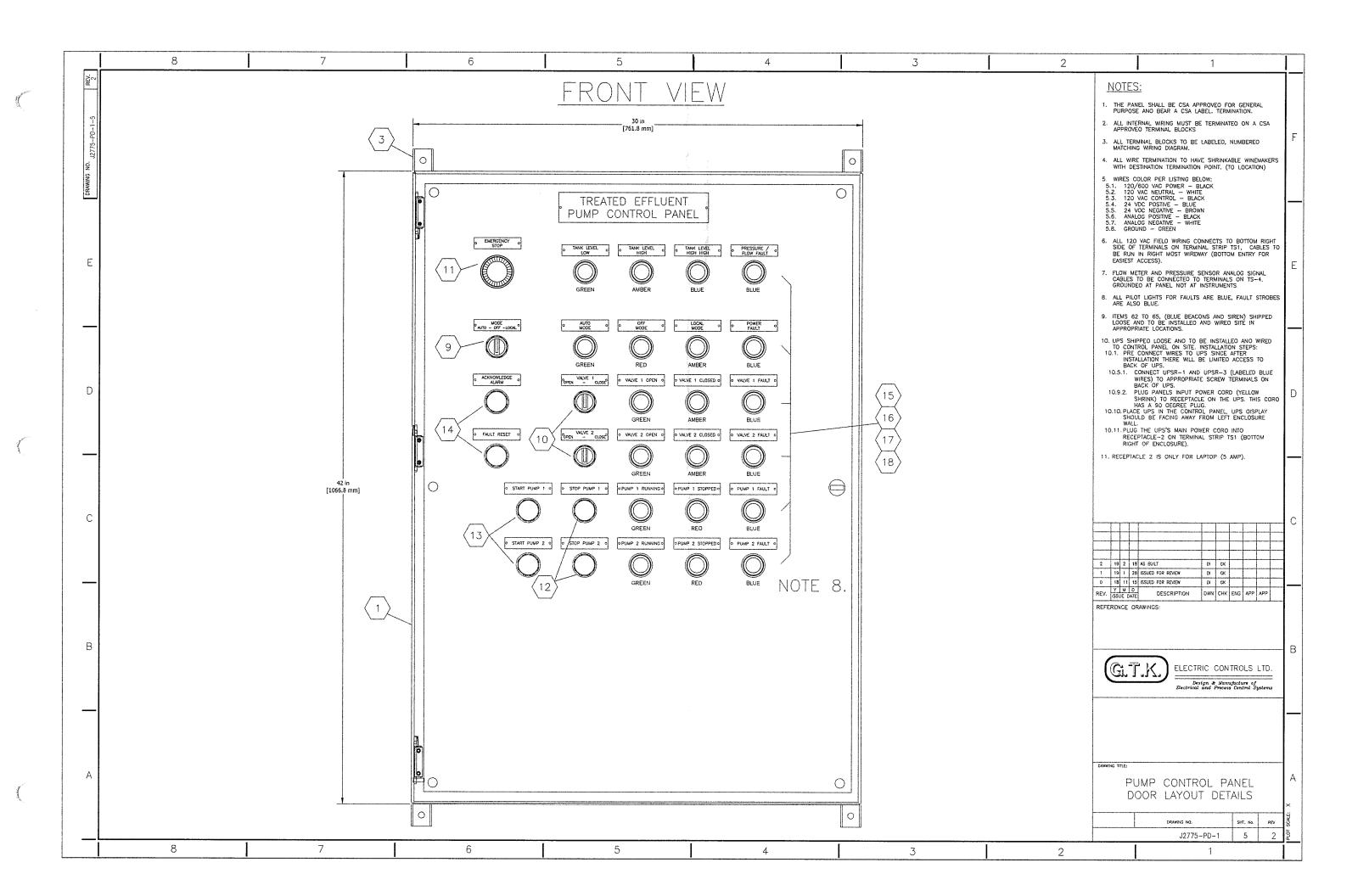


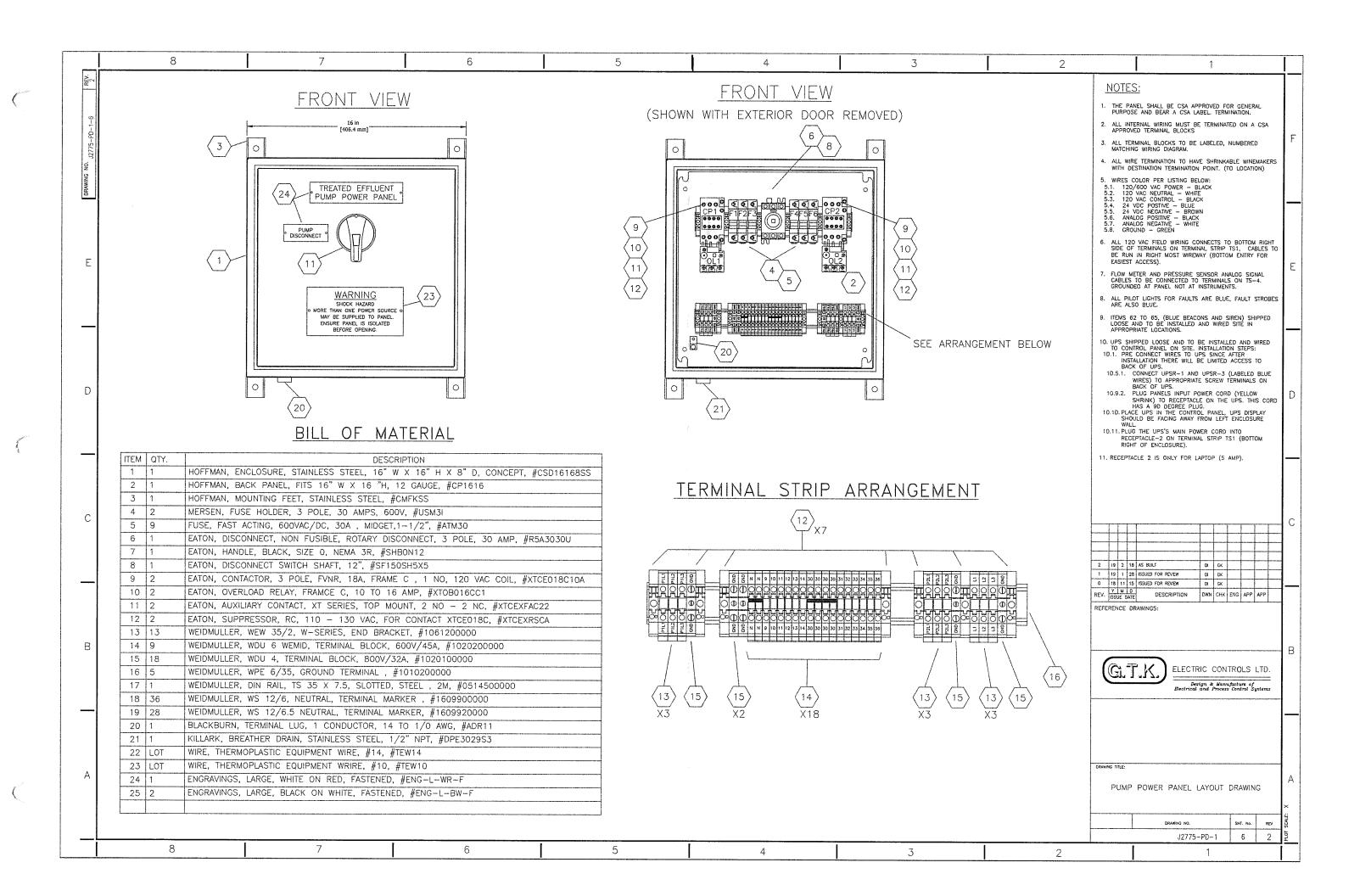


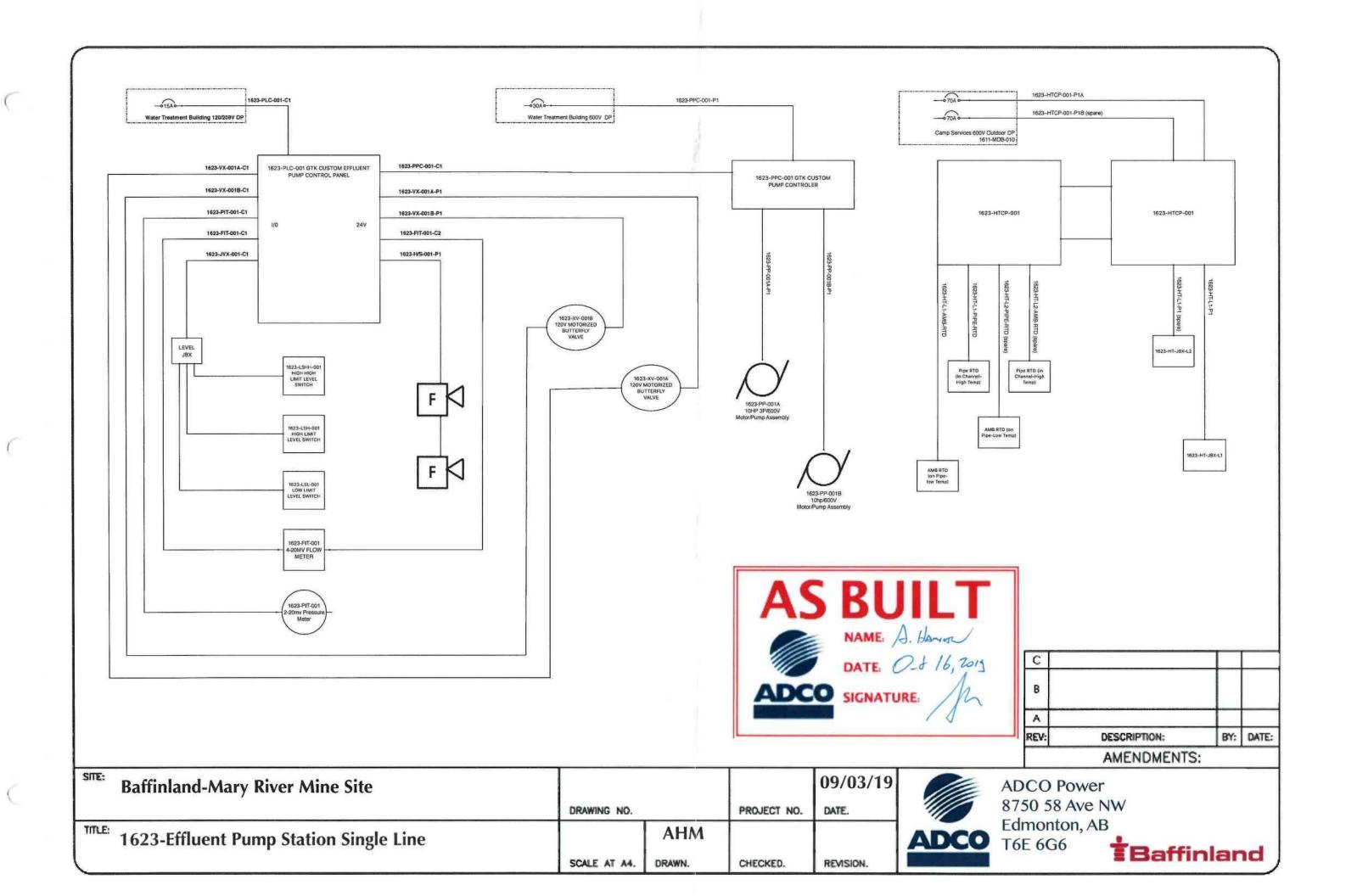


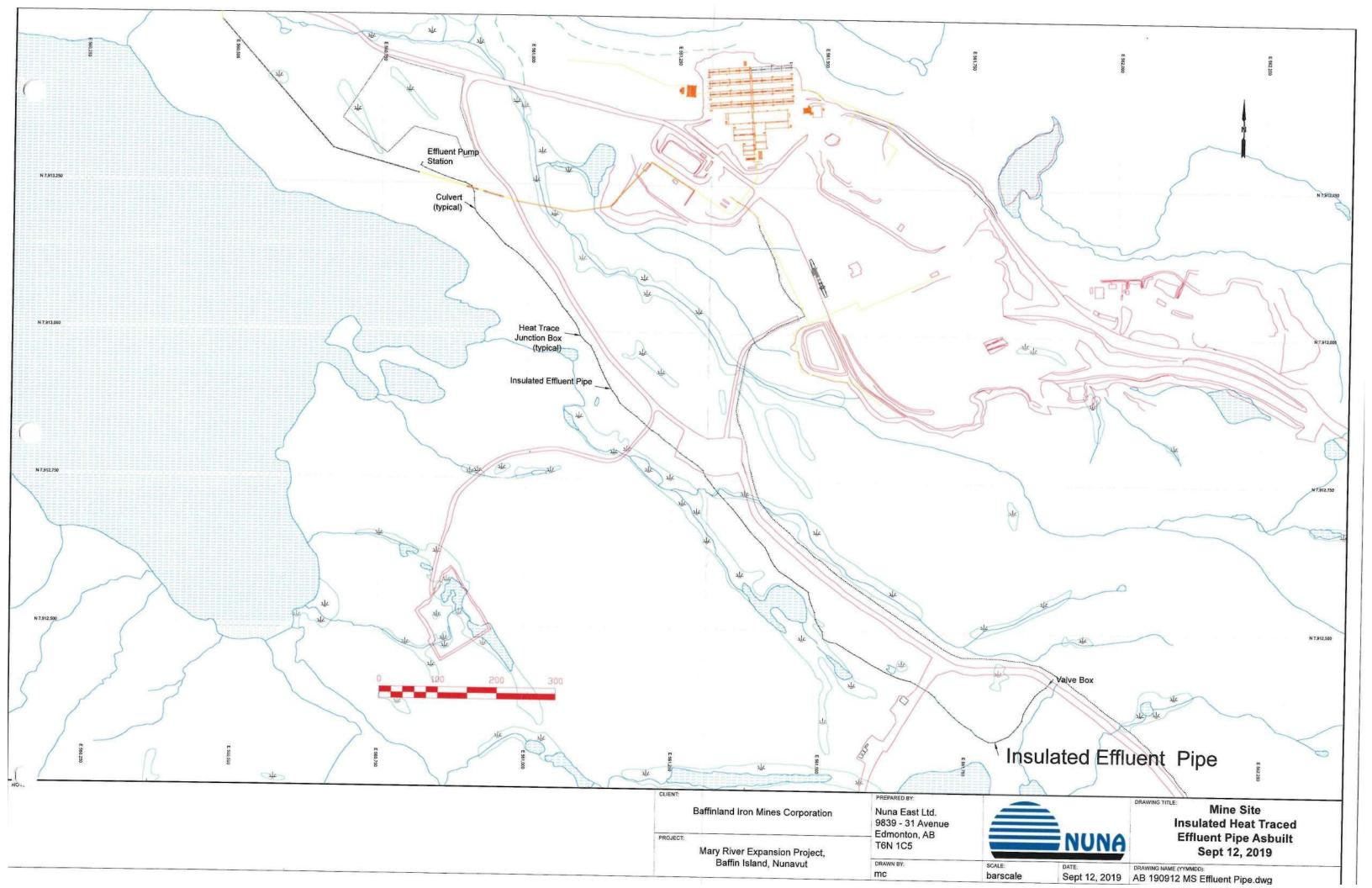


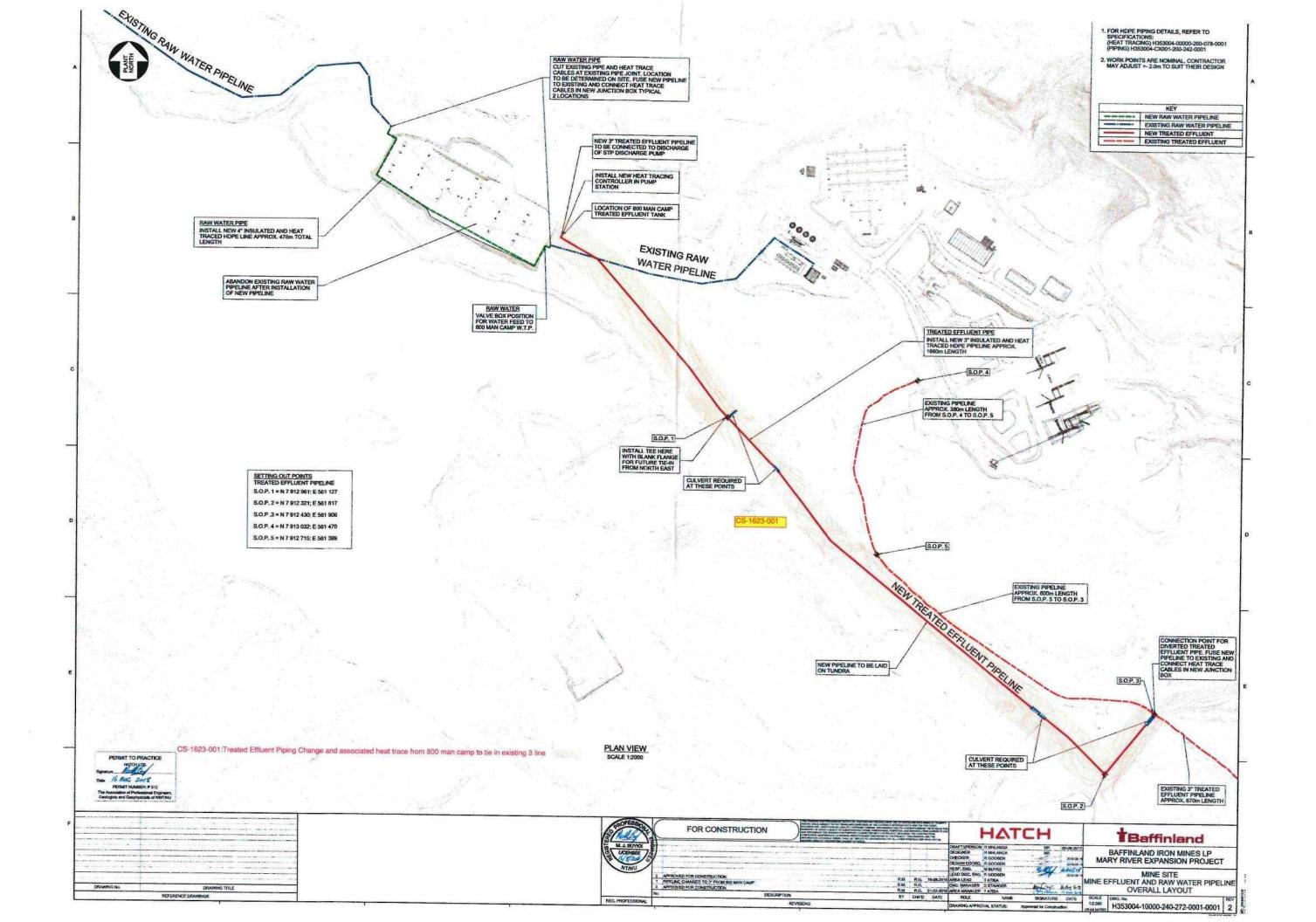
















Appendix B

Effluent Pumping Station and Effluent Line E353004-CX001-130-124-0009 Nuna Job File 3804-023 CVR-041 Mine Site Treated Effluent Pumping Station Turn Over

HATCH Vendor/Contractor Document Review				
Doc Number	E353004-CX001-130-124-0009	SUB	01	
Date Received				
	Review Grade	Next Submittal St	atus	
C2 - Proceed	d to next submission & status d with exceptions as noted to omission & status	☐ Certified ☐ As-Built	6	
C3 - Do not presubm Next Submittal D		☐Internal Reviev☐Certified/☐As		
	er submission required - Complete fied Final 🏮 Final 🔲 Cance	e (select status belovelled Supersed	100	
Reviewed only for gen		ance by the engineer co	ate or	

MEIP- 3804-23 CVR-041

Mine Site Treated Effluent Pumping Station

ADCO CWP QAQC TURNOVER PACKAGE TABLE OF CONTENTS



Tag No:		Project No:	3804 MEIP
(Sub)System:	1623- Effluent Pump Station	Area:	Milne Port Site
Description:		Drawing:	H353004-40000-260-284-0001-0001r0
CWP:	CVR-041	CLIENT:	BAFFINLAND IRON MINES, Baffin Island

1	
→).	General
	Scope
	ITP
	IFC Drawings
	Signature Log
	Quality Surveillance Report
	Corrective Action Report
	Written Inspection Request
	RFI Registry
2	Mechanical Mechanical
	CIS-70-999 Material Equipment Install List
	CTS-75-0156 Calibration of Instruments
	CIS-60-004 Pipework Installation
	CIS-60-010 Visual inspection of Flanges, Gaskets, and bolting
	CIS-75-019 Control Valves
	CIS-50-057 Bolt Torque Value Record
	CIS-60-007 Pressure Piping Report
3	Electrical
- I	CIS-70-025 Control and Relay Panels
	PIS-70-015 Misc. Electrical Equipment
	CIS-75-027 Limit/Sensor
	CIS-70-017- Conduit and Cable Tray
	CIS-70-056 -Grounding (above Ground)
	CIS-70-007- Low Voltage Cables <1kV
	CTS-70-020 Electrical Motor
	PIS-50-012 Pump Installation
	PIS-70-021 UPS Stystem Startup
	CTS-70-033 Electrical Junction Boxes
	CIS-75-029 Beacons, Sirens, Horn

ADCO CWP QAQC TURNOVER PACKAGE TABLE OF CONTENTS



Tag No:		Project No:	3804 MEIP
Sub)System:	1623- Effluent Pump Station	Area:	Milne Port Site
Description:		Drawing:	H353004-40000-260-284-0001-0001r0
CWP:	CVR-041	CLIENT:	BAFFINLAND IRON MINES, Baffin Island

#	<u>SECTION</u>
	ITP Closeout
4	The state of the s
	PIS-70-999 Construction Work Package Punch List
	Final Walkdown Punch List
	PIS-10-001 As Builts
	Certificate of Construction Completion
	Care and Custody Certificate
	Declaration of Completion
	Turnover Package Review of Completion



SECTION 1: GENERAL

- Scope
- ITP
- IFC Drawings
- Signature Log
- Quality Surveillance Report
- Corrective Action Report
- Written Inspection Request
- RFI Registry



SECTION 1: GENERAL

Scope





Treated Effluent Pump Station Scope of Work

Baffinland Iron Mines Corporation: Mary River Expansion Project H353004

Treated Effluent Pump Station Scope of Work 800-Person Camp

Date	Rev. Status Prepared By	Checked By	Approved By Client			
Date		Dropped Du Charles d Du	Approved By	1		
2018-08-16	0	Approved for Use P. Cherry	R. Goosen	P. Jim	T Atiba	
	South III Ita		With 74	2018-00-17	The state of the s	Jay Potma





Baffinland Iron Mines Corporation: Mary River Expansion Project H353004

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Appendix A Pump Station Layout

Appendix B Pump Curve

Appendix C Instrumentation Earthing Schematic





Baffinland Iron Mines Corporation: Mary River Expansion Project H353004

1. Introduction

Baffinland Iron Mines (BIM), the Owner, has initiated the expansion of the Mary River project, which consists of an iron ore mine and associated infrastructure located in Baffin Island, Nunavut.

This equipment specification provides the requirements for all labour, materials and services for the design, fabrication, testing, preparation for and site installation and commissioning of a new pump station. The pipeline to convey treated effluent from the 800-person camp Sewage Treatment Plant (STP) to the licenced discharge point is part of an existing CX001 work package.

2. Scope of Work

The Contractor shall provide an appropriate system, based on all information contained herein, including: new, complete, fully operational equipment, with all necessary auxiliary equipment and accessories, except where excluded from scope of work.

All exceptions to this specification shall be clearly informed in the proposal, to characterize an alternative supply. Nevertheless, compliance to specification does not exempt the Contractor from their responsibilities of furnishing reliable and safe equipment.

2.1 Equipment List

The following equipment are the major components of the pump station. Minor components are not listed; however, these shall be in the Bidder's scope to provide a complete package.

Table 2-1: 800-Man Camp Major Equipment List

Equipment Title	Quantity	Equipment Tag No.
Discharge pumps	2	1623-PP-001A/B
Pump station instrumentation	complete system	Various
Pump station electrical power supply and MCC panel	complete system	Various

2.2 Drawing Index

The drawings listed in Table 2-2 form the basis of the work to be completed.





Baffinland Iron Mines Corporation: Mary River Expansion Project H353004

Table 2-2: Drawings and Specifications

Document Number	Title
H353004-10000-240-272-0001-0001	Mine Site – Mine effluent and raw water pipeline – Overall layout
H353004-10000-270-276-0003-0002	Sewage Water Treatment P&ID
H353004-00000-260-210-0002	Electrical Design Criteria
H353004-00000-200-078-0017	Basic Electrical Requirements
H353004-00000-271-242-0001	Basic Instrumentation and Control Requirements
H353004-00000-270-242-0001	Site wide - Fibre Optic Network Modifications

2.3 Work Included

The Bidder's scope of work includes, but is not limited to, the detail design, supply, install and commissioning of following components:

- · Fully operational pumping system complete with pumps, piping, valves and controls
- New power supply to the heat trace controller in the pump station container and connect the heat trace cables to power supply
- Control panel/MCC to house motor drives as well as feeds to heat trace panel and container small power and lighting
- All required nozzles, manual valves for isolation and draining
- Interconnecting piping and supports
- All Electrical and Instrumentation scope items identified in Section 6.
- One full set of special tools, gaskets and sealants and all nuts and bolts required for field assembly and erection
- Shop assembly, testing, disassembly, match marking for field erection
- Equipment tagging and identification
- · Lubrication/protection for equipment before shipment
- Preparation and crating for shipment
- Recommended spare parts
- Drawings and manuals.

2.4 Work Excluded

The Bidder's scope of work specifically excludes the following:

- Supply and installation of the new treated effluent discharge pipeline (this is currently included in a separate CX001 work package)
- Lubricants other than initial fills and what is needed for shop testing and assembly
- Area lighting





Baffinland Iron Mines Corporation: Mary River Expansion Project H353004

- Interface to the Owner's Process Control System
- Site preparation, concrete, foundations, grouting and anchor bolts
- Receiving, unloading and storage of equipment at the plant site.

2.5 Battery Limits

The battery limits for the bidder is the following:

- Outlet nozzle on treated effluent tank behind the 800-person camp STP
- Existing ISO container containing the treated Sewage effluent tank
- Load terminal of breaker in panel 1611-MDB-010.

3. Process Conditions

3.1 Process Description

The permanent facility is to be constructed at the Mary River (Mine Site).

Treated effluent from the 800-man camp is stored in a containerised tank. This effluent needs to be pumped away to the licensed discharge point via 2.4 km pipeline (part of separate CX001 work package).

Two (2) new pumps (1623-PP-001A/B) will be installed in the same container as where the treated effluent tank is situated. The interconnecting pipework will be PVC class 12.

Pipes from pump station to be connected to the new 3" HDPE SDR11 (insulated and heat traced) pipeline that will be installed from the container to the licenced discharge point into the Mary River (by CX001 as part of a separate work package).

High/low level switches will be installed and used to operate the pumps.

3.2 Duty and Operational Requirements

The equipment shall be designed and constructed to operate for 20 hours per day, for 365 days per year without excessive maintenance.

3.3 Material Characteristics

The Supplier shall fabricate the equipment using only new materials of first grade quality, free from defects impairing strength, durability and appearance.

After the Purchase Order is issued, the Supplier shall not substitute materials, without prior written approval from the Owner.

Materials of construction shall be suitable for the specified duty and operating conditions.





Baffinland Iron Mines Corporation: Mary River Expansion Project H353004

4. Design Conditions

4.1 Pump Characteristic

The flow required will be the daily allowance ($250m^3/day$) x 1.5 (safety factor) / 20 (operating hours), resulting in the design flow of $18.75m^3/hr$.

Refer to Appendix B for the recommended vertical multi stage pumps. The duty points for the pumps can be seen on the pump curve.

Performance Requirement

5.1 Guarantees

The supplied equipment shall provide the flow as per Section 4.1.

5.2 Warranty

As per Contract.

5.3 Test Methods and Procedures

All test method details, timing, sampling protocols and procedures and tolerances shall be developed by the Contractor, submitted with the bid quotation and agreed upon with the Owner before issue of a variation order.

6. Control & Instrumentation and Electrical – Detailed Scope of Work

6.1 Overview of the Works

6.1.1 Control and Instrumentation Scope

- Programmable logical controller including programming
- Instruments
- Connection of all instruments
- PLC Panel.

6.1.2 Electrical Scope

- Connection to spare 100A breaker in outdoor panel 1611-MDB-010. This will include the installation of free-issued cable as well as any terminations.
- Motor Control Centre. Note that electronic motor protection relays must be fitted which can be controlled via PLC. See also Section 6.2.9.





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- · Electrical reticulation to all electrical loads
- · Plant power cabling, cable racks and sleeving
- Earthing, Grounding and Bonding protection systems
- The feeds including required supply voltage to building small power and lighting as well as heat trace control panel must be supplied by the Contractor. 600V/3ph will be available from panel 1611-MDB-010
- Testing and certification of the electrical system.

6.2 Control & Instrumentation Requirements

6.2.1 Control System Architecture

- 6.2.1.1 The proposed system is a standalone PLC located near the Effluent Tank.
- 6.2.1.2 A SCADA system is not required, neither is an HMI panel.
- 6.2.1.3 The status of motors, valves and other interface indications and selections shall be implemented using lamps, pushbuttons and selector switches.
- 6.2.1.4 The MCC panel shall interface to the PLC using wired signals. The contractor may elect to utilise a fieldbus link to interface the MCC and PLC should the contractor utilise a smart electronic overload protection device.

6.2.2 Process Control System

- 6.2.2.1 The pump station layout is illustrated in P&ID H353004-10000-270-276-0003-0002 -Sewage Water Treatment P&ID (refer to Table 2-2).
- 6.2.2.2 Control of the pump station shall be implemented in the PLC. The PLC shall monitor all instruments, process the data, and output controls to achieve the efficient and reliable control of the pump station equipment. The PLC shall generate alarms as necessary.
- 6.2.2.3 Motor Control shall be achieved utilising MCC's either directly hardwired to the PLC, or fitted with intelligent protection relays and circuit breakers linked together on a fieldbus network, which will be linked to the PLC.

6.2.3 Program Logic Controller (PLC)

- 6.2.3.1 The PLC shall be a stand-alone system.
- 6.2.3.2 The PLC shall be the Allan Bradley MicroLogix 1100 family of controllers or similar approved.
- 6.2.3.3 The PLC panel shall be installed inside the Pump Station Container.





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6.2.4 Software Engineering Station

- 6.2.4.1 A portable engineering station (laptop) shall allow for configuration and fault-finding of the PLC system for maintenance personnel. It shall host a licensed version of the PLC programming software together with all drivers to do programming when connected to the PLC.
- 6.2.4.2 The Engineering Station shall be supplied by the client onto which all software shall be loaded by the contractor. Should BIM be unable to supply a laptop for software development, the contractor shall purchase a laptop for this project. The minimum computer specification for the Engineering Laptop shall be as per BIM standards (refer to specification H353004-00000-270-242-0001 Site wide Fibre Optic Network Modifications). The laptop will be handed over to BIM after completion of the project with all software and programming intact for use by BIM engineering / maintenance.

6.2.5 Standby Power

6.2.5.1 A battery charger and battery system will be installed for the PLC system. The battery back-up unit will be placed near the PLC and to it and the MCCs for a minimum of 20 minutes after a power failure. The battery unit will feed the following critical equipment:

6.2.6 PLC Panel

- 6.2.6.1 The contractor shall conform to the Panel and related requirements set out in contract specification H353004-00000-271-242-0001 Contract General Instrumentation Engineering Requirements.
- 6.2.6.2 The PLC panel shall be equipped with sufficient I/O to accommodate all instrumentation (including motors and actuators) required for the systems and equipment to be installed. A minimum of 30% spare capacity shall be allowed for in the PLC panel.

6.2.6.3 Panel Electrical Supplies

6.2.6.3.1 Power Supplies

The contractor shall conform to the Power requirements set out in contract specification H353004-00000-271-242-0001 – Contract General Instrumentation Engineering Requirements.

A separate "Power Supply" compartment shall be provided for the housing of all power supply circuitry.





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6.2.6.3.2 Signal and Power Supply Standards

Signal and power supply standards for this scope of work are as follows:

Table 6-1: Signal and Power Supply

Equipment	Voltage
Field Electronic Signals	4-20 mA
Back of Panel Electronic Signals	1-5 V
Instrument Power Supply	120 Vac / 24 Vdc
PLC and Control Circuit Supply	120 Vac / 24 Vdc
Panel Lighting/Utility Plug Supply	120 Vac Raw
Equipment Plug Supply	120 Vac Standby

6.2.6.3.3 Earth Leakage Protection

Raw power supplies (120 Vac) shall be protected by means of an earth leakage protection circuit breaker.

6.2.6.3.4 24 VDC Power Supplies

Two 24 VDC power supplies shall be utilised, one for the PLC control equipment and the other for supplying power to PLC I/O racks, analogue transmitters and analogue I/O modules. The PLC control PSU will be part of the PLC itself.

6.2.6.3.5 The 24 V power supply manufacturer is Phoenix or similar approved.

6.2.6.4 Earthing/Neutrals

The contractor shall conform to the Earthing requirements set out in contract specification H353004-00000-271-242-0001 – Contract General Instrumentation Engineering Requirements.

- 6.2.6.4.1 Two (2) Earth bars are to be provided, consisting of hard drawn high conductivity copper busbar of adequate length for analogue cable screen, instrument and power supply earthing. One earth bar will be for instrument earth and the other earth bar for electrical earth. The instrument earth bar is to be mounted on stand-off insulators.
- 6.2.6.4.2 The instrument earth bar will be isolated from panel and shall only be bonded through noise limiting chokes to the Electrical Earth System.
- 6.2.6.4.3 The Instrumentation earth system shall be colour coded blue to distinguish it from the electrical safety earth system which shall be colour coded green/yellow. The blue instrument earth conductor shall however be green/yellow sleeve identification at the termination points. Refer to Panel Earthing sketch in Appendix C
- 6.2.6.4.4 Double pole circuit breakers will be used for all power distribution. Terminal strips with suitably populated terminals and bridging strips can be used to common neutrals or lives.
- 6.2.6.4.5 No neutral bar like the earth bar is allowed.





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6.2.6.5 Panel Wiring

6.2.6.5.1 General

The contractor shall conform to the Panel Wiring requirements set out in contract specification H353004-00000-271-242-0001 - Contract General Instrumentation Engineering Requirements.

6.2.6.5.2 Wiring Bundling

The contractor shall conform to the Panel Wiring requirements set out in contract specification H353004-00000-271-242-0001 – Contract General Instrumentation Engineering Requirements.

- Wiring in plastic cable trunking with covers shall not be filled greater than 60%.
- Bundling of wires outside trunking shall be accomplished with 'Spiralbind' or
 equivalent. The bundles shall be securely fastened to the structure at suitable points
 between terminal blocks, trunking and electrical devices. (No stick-on cable tie
 holders are permitted.)
- Where wire bundles cross a hinge line, the bundle is to be arranged so that the wires twist as opposed to bending.
- All panel equipment terminals, labels, etc., will be completely accessible after the wiring and cabling has been completed.
- Where wiring bundles pass through a hole in a bulkhead, the hole will be rectangular
 with rounded corners and will be sized such that wires are layered no more than three
 deep, and such that only 50% of the hole space is used. The edges of the holes are
 to be securely lined with nylon or PVC protective trim, to prevent the metal from
 cutting through the insulation/wiring.

6.2.6.5.3 Wire

The contractor shall conform to Wiring requirements set out in contract specification H353004-00000-271-242-0001 — Contract General Instrumentation Engineering Requirements.

Wiring will be signal colour coded according to contract specification H353004-00000-271-242-0001 – Contract General Instrumentation Engineering Requirements.

6.2.6.5.4 PLC I/O Wiring

The contractor shall conform to the Panel Wiring requirements set out in contract specification H353004-00000-271-242-0001 – Contract General Instrumentation Engineering Requirements.

6.2.6.5.5 Cable Glanding Area

- A raised cable glanding area is to be provided to facilitate handling of the cables while glanding. A horizontal PVC wire trunk is to be provided immediately above the glanding area to facilitate distribution of wiring.
- Instrument earths are to be installed close to any analogue cable glanding area to allow for termination of earthing screen drain wires.





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6.2.6.5.6 Terminals and Terminal Rails

The contractor shall conform to the Terminal requirements set out in contract specification H353004-00000-271-242-0001 – Contract General Instrumentation Engineering Requirements.

- All terminals shall be of Phoenix manufacture or equivalent approved
- 20% spare terminal rail space is to be allowed on each length of terminal rail.

6.2.7 Operator Interface

The contractor shall conform to the Local Operator requirements set out in contract specification H353004-00000-271-242-0001 – Contract General Instrumentation Engineering Requirements.

- 6.2.7.1 The operator interface shall be at the pump station. Start/stop buttons and lamp indications shall be available on the front of the PLC or MCC panel as appropriate.
- 6.2.7.2 Push Buttons will be approved types and powered by 24 Vdc.
- 6.2.7.3 Indication lights will be the approved types and powered by 24 Vdc. The preferred light is a LED 24 Vdc.
- 6.2.7.4 Local audio (siren) and visual alarms (flashing light) shall be supplied and installed by the contractor.

6.2.8 Safety Consideration

- 6.2.8.1 All alarms and safety interlocks shall be designed to be fail-safe.
- 6.2.8.2 Under normal operating conditions, contacts initiating an alarm or shutdown will be closed, and relays and actuating devices will be energised.
- 6.2.8.3 All personnel safety interlocks, such as E-stops, shall be hardwired into the motor control circuits and monitored by the PLC.
- 6.2.8.4 Whenever equipment stops due to a trip condition, a positive action from the operator via a reset pushbutton shall be required prior to restarting the equipment.

6.2.9 Motor Control

6.2.9.1 The MCC's shall be fitted with intelligent protection relays and circuit breakers and shall either be linked together on a Fieldbus network such as Industrial Ethernet, which shall be linked to the PLC system via a suitable link, or the signals shall be hardwired to the PLC.

6.2.10 Instrumentation

The contractor shall conform to the Instrumentation requirements set out in contract specification H353004-00000-271-242-0001 – Contract General Instrumentation Engineering Requirements.





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6.2.10.1 Standard Signals

- Analog signals will be 4-20mA DC signals
- Digital signals will be 24 Vdc for field instrumentation and on/off I/O
- Signal types and wire colours shall conform to specification.

6.2.10.2 Field Instruments

- · Control valves and in-line instruments shall conform to specification
- Instruments will be rated IP66 as a minimum
- Instruments with materials in direct contact with the process will be selected based on the liquid / solid in the process, as well as the piping / tank material specification
- No installation details will be prepared.

6.2.10.2.1 Flow Instruments

 A Calorimetric Mass flowmeter shall be used for flow measurement of the final effluent being pumped as indicated on the P&ID. An Endress and Hauser T-Mass or similar approved shall be used.

6.2.10.2.2 Level Switches

- Tilt type level sensors shall be used for level application. Direct wired tilt switches are
 preferred with timers in the PLC. Endress and Hauser Tilt or similar approved shall be
 used
- The contractor may elect to utilise other level control instruments with approval from the Engineer.

6.2.10.2.3 Pressure Instruments

- Direct connected gauge pressure indicating transmitters shall be used for pressure measurements. An Endress and Hauser Pressure transmitter similar approved shall be used.
- The transmitters shall have a body and fittings of appropriate pressure rating and 316 Stainless Steel diaphragms as a minimum standard.
- The gauge pressure transmitters shall have two-way manifolds to facilitate isolation and calibration.

6.2.10.2.4 On/Off Control Valves

On/Off Control valves shall conform to contract specification H353004-00000-271-242-0001 - Contract General Instrumentation Engineering Requirements.

6.2.10.3 Instrument Earthing

Earthing shall conform to contract specification H353004-00000-271-242-0001 – Contract General Instrumentation Engineering Requirements.





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- A separate instrument earth bar shall be provided at the PLC. All instrument earthing shall be connected to this earth bar only. Instruments shall not be earthed at the instrument in the field.
- The instrument earth bar shall be connected to the main earth bar via a surge gap arrestor.
- A minimum of 4mm2 copper cable shall be used for common bonding purposes.
 16mm2 PVC copper wire shall be used to earth instruments and cabinets.

6.2.11 Cables

Instrumentation cables shall conform to contract specification H353004-00000-271-242-0001 – Contract General Instrumentation Engineering.

6.2.12 Cable Trays

The contractor shall conform to the cable layout section of the contract specification H353004-00000-271-242-0001 – Contract General Instrumentation Engineering.

Racking shall be of heavy duty ladder type for electrical cables. Industrial basket type racking may be utilised for instrumentation cables. No doubling up of cables is allowed. The racking shall be vertically mounted, and the cables fastened to the rack with plastic cable ties indoors and outdoors with stainless steel straps in all areas exposed to the sun, every 3m.

All racks shall be properly aligned and supported on permanent members and not affixed to the roof decks of temporary structures. Beam clamps are to be used to secure the cable rack to permanent fixtures on the building structure. The maximum distance between centres of adjacent supports shall be 1.5 metres horizontal and 3m vertical.

Separate cable trays shall be used to provide isolation between power, control and instrument cables.

Cable ladders and all fixing bolts, nuts, washers, brackets, etc., shall be 316L stainless steel.

6.2.13 Notices and Labels

All notices, labels and designations shall be in English. A list of wording, terms, designations etc., shall be submitted for approval before manufacturing of labels and notices commences. Equipment shall be marked clearly in accordance with the Drawings.

All cables shall be clearly labelled at both ends. Labels shall be permanent and indelible.

Numbering and labelling shall be such that, during maintenance, the wiring can be traced by using the Record ("As Installed") Drawings.

A unique combination of letters and numbers shall be used in identifying instruments. The instrument identification number shall be constructed as per the ISA standards (ANSI/ISA-5.1 Instrumentation Symbols and Identification).





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The unique identification number shall be constructed as follows:

MMMM-XX-NNNY

Where:

2 to 5 character functional description according to the ISA standard
specification for instrument numbering
3-digit serial number
Suffix (optional) to differentiate between instrument with identical function
50

A parallel numbering system shall be used; all instruments on common mechanical equipment shall receive the same sequential number.

6.2.14 Operational Philosophy

- 6.2.14.1 The contractor shall conform to the Local/Auto Control Station requirements of the contract specification H353004-00000-271-242-0001 Contract General Instrumentation Engineering.
- 6.2.14.2 The pump station shall be controlled automatically by the PLC when selected from the front panel in auto mode.
- 6.2.14.3 Pumpsets
- 6.2.14.3.1 Each motor control panel shall be equipped with at least the following lamp indications. The lamp indications shall be clearly labelled:
 - Running (Red)
 - Stopped (Green)
 - Fault (Blue).
- 6.2.14.3.2 Each motor control panel shall be equipped with at least the following controls. The controls shall be clearly labelled:
 - Start Pushbutton
 - Stop Pushbutton
 - Fault Reset Pushbutton
 - Emergency Stop (E-Stop) Pushbutton
 - Local/Auto Selector Switch.





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The lamps and control buttons shall constitute the operator local control station. The controls on the front door of the MCC panel enclosure shall enable the operator to individually start/stop the pumps through the selection of local mode as well as sequence start/stop equipment subject to process and equipment interlocks.

6.2.14.4 Valves

- 6.2.14.4.1 Each valve shall be equipped with at least the following lamp indications. The lamp indications shall be clearly labelled:
 - Closed Limit (Red)
 - Open Limit (Green)
 - Valve Moving (Yellow)
 - Valve Fault (Blue).
- 6.2.14.4.2 Each Valve shall be equipped with at least the following controls. The controls shall be clearly labelled:
 - Open Pushbutton
 - Close Pushbutton
 - Fault Reset Pushbutton
 - Valve Local/Auto Selector Switch.

The lamps and control buttons shall constitute the operator local valve control station. The controls on the valve actuator shall enable the operator to individually open/close the valve through the selection of local/auto mode on the valve.

6.2.14.5 Level Switches

Lamps on the front of the PLC panel shall be used to indicate the level of the effluent in the tank. The lamps shall be driven by the PLC on receipt of signals from the Hi-Hi, Hi and Lo level switches installed in the tank.

The lamp indication shall illustrate the activation of the level switches. The lamp indications shall be clearly labelled:

- Level Switch Active (Red On)
- Level Switch Inactive (Off).

6.2.15 Control Philosophy

Treated Sewage Effluent from the 800-person camp sewage treatment plant is transported to the Effluent Holding Tank 1623-TK-001 and from there the Effluent is pumped to the Licensed Discharge Point at the Mary River.





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6.2.15.1 Automatic Mode

Three float type limit switches are utilised to control the operation of the pump sets, 1623-PP-001A and 1623-PP-001B. The pump sets are operated in a duty/standby arrangement. The PLC shall maintain equal operating hours for each pump set and shall as far as possible alternate the pumps after each start.

The duty pump will only start when the high-level switch (1623-LSH-001) in the tank is activated by the rising level of effluent in the tank.

Before the duty pump is started, the standby pump shall be stopped if running and the standby delivery shut-off valve shall be closed, if not already closed, to ensure no backflow through the standby pump.

Once the standby pump is stopped and its delivery shut-off valve is confirmed closed, the PLC shall open the delivery valve of the duty pump, if not already opened.

Upon successful completion of delivery valve opening, the PLC shall start the duty pump.

The duty pump will continue to run until the low-level switch (1623-LSL-001) in the tank is activated by the dropping level of effluent in the tank. Once the duty pump is stopped its associated delivery valve shall be closed.

The PLC shall ensure that flow (1623-FIT-001) is established in the line after a set period (initially 10 seconds) after a pump has been started. The PLC shall also ensure that pressure (1623-PIT-001) is established in the line after an initial stabilisation period of starting the pump. This shall be used to protect against a burst pipe situation. The pressure and flow limits shall be established during commissioning of the system. Should either of these situations arise an alarm shall be raised.

Flowmeter 1623-FIT-001 and Pressure Transmitter 1623-PIT-001 shall further be monitored whilst the duty pump is operating and excursions outside normal operating limits shall raise an alarm. Such alarms shall be inhibited whilst the pumps are idle and/or during pump start-up.

A high-high level of effluent in the tank shall also raise an alarm and the standby pump shall be called. This alarm shall be automatically reset once the level drops below the high operating level 1623-LSH-001 and the standby pump shall be released.

Alarms are indicated locally utilising an audio/visual system. The alarm shall be resettable from the local operator control station.

A pump shall not be started unless it is in automatic mode and is available to start. Activation of the E-Stop will cause the pump to be stopped immediately. The associated valve motor shall also be stopped immediately. These shall be a hard-wired safety interlock which the PLC shall monitor and record. It shall not be possible to override safety interlocks. However, an operator may manually override process interlocks (flow and pressure, tank levels) through the selection of manual mode.

Process interlock alarms shall be required to be reset via the operator at the local control panel.





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6.3 Electrical Engineering Requirements

6.3.1 General Information

- 6.3.1.1 All relevant technical information regarding each component or item offered shall be included either in the forms to be completed by the contractor or as an Appendix to the offer, in order that the Engineer can make a proper evaluation of the offer.
- 6.3.1.2 Where products of a Contractor are specified, the supply of equal products from other Contractors may also be supplied if approval for such products is obtained from the Engineer.

6.3.2 Motor Control Centres (MCC), Distribution Boards (DB) and Local Control Panels (LCP)

6.3.2.1 General

- The MCC shall be a vermin-proof type and manufactured from sheet steel having a minimum thickness of 2.0 mm.
- Starters, incoming breakers and local DB shall be housed in separate compartments.
 Each separate compartment shall be provided with a hinged door which shall be arranged so that it cannot be opened while the apparatus contained therein is live unless this apparatus is fully shrouded or screened to prevent inadvertent contact. Where the apparatus contained in the compartment is provided with an isolating switch or MCB, the door shall be mechanically interlocked so that it cannot be opened unless the switch is in the "OFF" position.
- The bus-bars shall be rated for the full load capacity of the main switch and shall be capable of withstanding the stated fault level.

6.3.2.2 Bus-bars

- Horizontal power bus-bars and vertical bus-bar droppers shall be copper, of constant cross-sectional area throughout their length, and shall be mechanically braced for the short circuit current value as specified.
- Refer to Electrical Design Criteria, H353004-00000-260-210-0002, and Basic Electrical Requirements specification, H353004-00000-200-078-0017 for more detailed information.

6.3.2.3 Wiring

 Refer to Electrical Design Criteria, H353004-00000-260-210-0002, and Basic Electrical Requirements specification, H353004-00000-200-078-0017 for more detailed information.

6.3.2.4 Earthing and Bonding

 Refer to Electrical Design Criteria, H353004-00000-260-210-0002, and Basic Electrical Requirements specification, H353004-00000-200-078-0017 for more detailed information.





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6.3.2.5 Pushbutton Control Stations

 Refer to Electrical Design Criteria, H353004-00000-260-210-0002, and Basic Electrical Requirements specification, H353004-00000-200-078-0017 for more detailed information.

6.3.2.6 Motor Control

 Refer to Electrical Design Criteria, H353004-00000-260-210-0002, and Basic Electrical Requirements specification, H353004-00000-200-078-0017 for more detailed information.

Table 6-2: Motor Control Centre Data Sheet

(To Be Completed for Each DB AND MCC)

Item No.	Description	Selection
1	MANUFACTURER AND TYPE NO	
2	APPLICABLE STANDARD	
3	ISO9001 CERTIFICATION	
4	TYPE TESTED DESIGN CERTIFICATION	
5	SEGREGATION	100000000000000000000000000000000000000
6	ASSEMBLY TYPE	
7	PROTECTION CLASS: IP	
8	MODULE CONSTRUCTION TYPE	1200
9	CABLE ENTRY	
10	MOUNTING	
11	BUS-BAR DIMENSIONS (W,T)	
12	OVERALL DIMENSIONS (H,W,D)	
13	OVERALL MASS	
14	FREQUENCY	
15	PHASES	
16	RATED OPERATING VOLTAGE	
17	RATED INSULATION VOLTAGE	
18	RATED IMPULSE WITHSTAND VOLTAGE	
19	RATED NORMAL CURRENT OF THE BUS-BAR	
19.1	MAIN FEEDERS	
19.2	OTHER FEEDERS	
20	RATED SHORT TIME WITHSTAND CURRENT	





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Item		0.1-6
No.	Description	Selection
21	WITHSTAND TO INTERNAL ARC	
22	CONTROL TRANSFORMER RATING	
23	CONTROL VOLTAGE	
24	INCOMER CIRCUIT BREAKER MANUFACTURER AND TYPE NO	
25	BREAKERS MANUFACTURER AND TYPE NO	
26	SWITCH FUSES MANUFACTURER AND TYPE NO	
27	FUSE LINKS MANUFACTURER AND TYPE NO	
28	FUSES MANUFACTURER AND TYPE NO	
29	CONTACTORS MANUFACTURER AND TYPE NO	
30	INCOMER CIRCUIT BREAKER MANUFACTURER AND TYPE NO	
31	OVERLOAD RELAYS (THERMAL) MANUFACTURER AND TYPE NO	
32	OVERLOAD RELAYS (ELECTRONIC) MANUFACTURER AND TYPE NO	
33	THERMISTOR RELAYS MANUFACTURER AND TYPE NO	
34	SELECTOR SWITCHES MANUFACTURER AND TYPE NO	
35	ISOLATING SWITCHES MANUFACTURER AND TYPE NO	
36	CURRENT TRANSFORMERS MANUFACTURER AND TYPE NO	
37	AMMETERS MANUFACTURER AND TYPE NO	
38	VOLTMETERS MANUFACTURER AND TYPE NO	
39	INDICATOR LIGHTS MANUFACTURER AND TYPE NO	
40	HOURS RUN METERS MANUFACTURER AND TYPE NO	
41	METERING MANUFACTURER AND TYPE NO	
42	PUSHBUTTONS MANUFACTURER AND TYPE NO	
43	POWER TRANSDUCER MANUFACTURER AND TYPE NO	
44	RELAYS (AC) MANUFACTURER AND TYPE NO	
45	RELAYS (DC) MANUFACTURER AND TYPE NO	
46	PHASE FAILURE RELAYS MANUFACTURER AND TYPE NO	
47	SURGE SUPPRESSORS MANUFACTURER AND TYPE NO	
48	TERMINALS (POWER) MANUFACTURER AND TYPE NO	
49	TERMINALS (CONTROL) MANUFACTURER AND TYPE NO	
50	FERRULES MANUFACTURER AND TYPE NO	
51	TIMING RELAYS MANUFACTURER AND TYPE NO	
52	MOULDED CASE CIRCUIT BREAKERS MANUFACTURER AND TYPE NO	





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Item No.	Description	Selection
53	CONTROL TRANSFORMER MANUFACTURER AND TYPE NO	
54	MOTOR STARTERS TYPES COORDINATION TYPE TO IEC 947	
55	PROTECTIVE COATING SYSTEM	
56	INTERNAL PAINT COLOUR	
57	EXTERNAL PAINT COLOUR	

6.3.3 Cables and Cabling

6.3.3.1 Cable Types

 Refer to Electrical Design Criteria, H353004-00000-260-210-0002, and Basic Electrical Requirements specification, H353004-00000-200-078-0017 for more detailed information.

6.3.3.2 Identification of Cables

 Refer to Electrical Design Criteria, H353004-00000-260-210-0002, and Basic Electrical Requirements specification, H353004-00000-200-078-0017 for more detailed information.

6.3.3.3 Cables Installed on Cable Racks and Trays

 Refer to Electrical Design Criteria, H353004-00000-260-210-0002, and Basic Electrical Requirements specification, H353004-00000-200-078-0017 for more detailed information.

6.3.3.4 Termination and Jointing of Cables

 Refer to Electrical Design Criteria, H353004-00000-260-210-0002, and Basic Electrical Requirements specification, H353004-00000-200-078-0017 for more detailed information.

6.3.4 Low Voltage Induction Motors

6.3.4.1 General

 This Clause defines the design, manufacture, inspection, testing and delivery of low voltage single speed, three phase, AC, induction motors.

6.3.4.2 Rating

 Refer to Electrical Design Criteria, H353004-00000-260-210-0002, and Basic Electrical Requirements specification, H353004-00000-200-078-0017 for more detailed information.

6.3.4.3 Method of Starting

The motors shall be suitable for full voltage starting direct on line.





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6.3.4.4 Power Factor

 Refer to Electrical Design Criteria, H353004-00000-260-210-0002, and Basic Electrical Requirements specification, H353004-00000-200-078-0017 for more detailed information.

6.3.4.5 Efficiency

 Refer to Electrical Design Criteria, H353004-00000-260-210-0002, and Basic Electrical Requirements specification, H353004-00000-200-078-0017 for more detailed information.

6.3.4.6 Thermistors and Temperature Sensors

 Refer to Electrical Design Criteria, H353004-00000-260-210-0002, and Basic Electrical Requirements specification, H353004-00000-200-078-0017 for more detailed information.

6.3.4.7 Enclosure

 Refer to Electrical Design Criteria, H353004-00000-260-210-0002, and Basic Electrical Requirements specification, H353004-00000-200-078-0017 for more detailed information on IP ratings.

6.3.4.8 Cooling

- Refer to Electrical Design Criteria, H353004-00000-260-210-0002, and Basic Electrical Requirements specification, H353004-00000-200-078-0017 for more detailed information.
- When controlled by a VSD, the motor cooling shall be designed for the load and the lowest duty speed at which the motor will operate.

6.3.4.9 Motor Terminal Box

 Refer to Electrical Design Criteria, H353004-00000-260-210-0002, and Basic Electrical Requirements specification, H353004-00000-200-078-0017 for more detailed information.

6.3.4.10 Insulation

 Refer to Electrical Design Criteria, H353004-00000-260-210-0002, and Basic Electrical Requirements specification, H353004-00000-200-078-0017 for more detailed information.

6.3.4.11 Bearings

- Bearings shall be sealed and shall have a nominal life rating of 60 000 hours.
- The bearing system of motors with vertical shafts shall be capable of carrying an axial thrust equivalent to not less than twice the weight of the rotor.
- For motors with horizontal shafts, the bearing system shall be capable of carrying sufficient axial thrust to allow the motor to be run disconnected from the load.





Baffinland Iron Mines Corporation: Mary River Expansion Project H353004

6.3.4.12 Lifting Eyes

 Motors shall be supplied with lifting eyes to enable each motor to be lifted by an overhead crane. The lifting eye shall be suitably rated for the mass of the fully assembled motor.

6.3.4.13 Nameplates

Motors shall be fitted with the following stainless steel nameplates:

- Motor rating plate with a unique serial number; and
- Temperature sensor data plate, including the manufacturer, type number, tripping temperature, resistance of each sensor at the tripping temperature, and the number of sensors embedded per winding.

6.3.5 Earthing, Bonding and Lightning Protection

6.3.5.1 General

- The earthing of the entire electrical installation shall be installed by the Contractor and shall consist of electrical earthing, instrument earthing and lightning protection.
- The Contractor shall carry out all the earth resistance testing as required. Refer to Electrical Design Criteria, H353004-00000-260-210-0002, and Basic Electrical Requirements specification, H353004-00000-200-078-0017 for more detailed information.

6.3.5.2 Instrument Earthing

- A separate instrument earth bar shall be provided at the PLC. All instrument earthing shall be connected to this earth bar only. Instruments shall not be earthed at the instrument in the field.
- The instrument earth bar shall be connected to the main earth bar via a surge gap arrestor.

7. Testing and Commissioning

7.1.1 Factor Acceptance Tests (FAT)

7.1.1.1 Factory Acceptance testing shall be performed as detailed in the contract specifications.

7.1.1.2 Mechanical Equipment

The Contractor shall provide the Employer with a test certificate and performance curves demonstrating the pumps ability to achieve the required duty flows.

7.1.1.3 Process and Systems Control

The Contractor shall submit with their offer a schedule of FAT tests complete with a proposed testing methodology which must be agreed with the Employer prior to finalising the contract variation.





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The testing methodology shall be designed to ensure that the equipment proposed complies with the requirements of this specification as well as with all relevant national and international standards.

The testing methodology shall further be designed to simulate the Control Philosophy.

As a minimum the following equipment and instrumentation shall be tested:

- PLC Panel
- Delivery shutoff valves
- Local Control Panels
- Junction Boxes
- Instrumentation calibration certificates.

The Employer shall be given two weeks' notice prior to the execution of FAT tests should they wish to send a representative to witness the tests.

7.1.1.4 Electrical Equipment

The Engineer may carry out periodic inspections during various stages of manufacture.

An electrical COC (certificate of compliance) shall be provided for the complete installation.

Final factory tests of the Motor Control Centres shall be carried out before despatch from the works.

These tests shall include, but not be limited to, the following:

- Tests to determine that the apparatus fully and strictly complies with the requirements of the Specifications;
- Comprehensive primary injection tests of all current transformers and associated circuitry;
- Comprehensive pressure tests to prove insulation quality; and
- Functional tests of all control gear and the feeders.

7.1.1.5 Factory Tests (Low Voltage Induction Motors)

Motors shall be subjected to routine tests and a copy of the test certificates shall be supplied to the Engineer, within 7 days of the test.

The Engineer shall be informed in writing timeously of the testing before testing commences to arrange to witness the tests.

7.1.2 Site Acceptance Tests

7.1.2.1 Site Acceptance testing shall be performed as detail in the contract specification.





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- 7.1.2.2 Water Tightness Tests to the following structures.
 - Pump lines and Flanges, Valves, etc.

7.1.3 Dry Commissioning

- 7.1.3.1 The contractor shall, after installation perform their own tests to confirm that all mechanical and electrical equipment and control systems, instruments and alarms are operational.
- 7.1.3.2 Once the Contractor is satisfied that all systems are operational he shall invite the Engineer to witness a demonstration. The Engineer shall be obliged to make time available to witness the dry commissioning within 5 working days of being notified of the equipment readiness.
- 7.1.3.3 The Contractor shall demonstrate compliance with the technical specifications under simulated conditions at the dry commissioning.
- 7.1.3.4 Should the Contractor fail to demonstrate compliance, the Contractor shall be tasked with remedying the non-compliances and inviting the Engineer for a second dry commissioning simulation. The Engineer may redeem costs for the additional dry commissioning exercise.

7.1.4 Wet Commissioning

- 7.1.4.1 Having been informed by the Engineer that the Contractor has successfully demonstrated compliance with the technical specifications during the dry commissioning exercise, the Contractor may proceed with wet commissioning of the plant.
- 7.1.4.2 The wet commissioning shall require the Contractor to operate the equipment continuously and trouble free under normal site operating conditions for a duration of 7 days.
- 7.1.4.3 The Employer reserves the right to instruct the Contractor, at his cost, to proceed with detailed performance tests.
- 7.1.4.4 The cost of such a performance test shall be borne by the Employer if the results prove that the equipment complies with the requirements of this technical specification.
- 7.1.4.5 Should the tests prove that the equipment does not comply the requirements of this specification; the costs of the performance tests, as well as any remedial measures shall be borne by the Contractor.
- 7.1.4.6 Subsequent performance testing shall follow the same model.

8. Temporary Works

- 8.1.1 Temporary works are as defined in the Condition of Contract.
- 8.1.2 The Contractor retains responsibility for the design of all temporary works.





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9. Contractors Documents

9.1.1 Programme

- 9.1.1.1 Notwithstanding the requirement for the Contractor's Programme to be approved by the Engineer prior to Commencement of the Works, the Contractor shall submit a first draft of the Programme with their submission.
- 9.1.1.2 The Programme shall:
 - Be prepared with Microsoft Project and be submitted as a *.mmp format file as well as in hard copy.
 - Be presented as a "Gantt" Chart and include the functionality to record %age complete for a particular activity.
 - · Have construction and personnel resources assigned to activities
 - · Be accompanied with a method statement.
- 9.1.1.3 The Contractor shall be deemed to have allowed fully in his tendered rates and prices as well as in his program for all possible delays due to normal adverse weather conditions as specified in the Project Specifications.
- 9.1.1.4 It is noted that there are several contracts being executed simultaneously in the execution of the Mine Expansion project. It may be expected that the performance of this contract may impact on the ability of other contractors to execute their responsibilities as defined in their respective contracts. To this end it is highlighted that the Employer shall rely upon the Contractor's Programme when planning the sequencing of works to be executed under other Contracts.
- 9.1.1.5 In the event of there being a delay to the completion of the works attributed to the Contractor, which results in a delay to the commencement and / or execution of another contract, the Employers reserves the right to claim delay damages from the Contract. In this instance, the delay damages shall be as defined in the Contractors existing contract, plus any additional damages suffered by the Employer under the other affected Contracts.
- 9.1.2 Progress Reports
- 9.1.2.1 As per contract specifications.
- 9.1.3 Method Statements
- 9.1.3.1 As per contract specifications.
- 9.1.4 Offer Submission
- 9.1.4.1 The Contractor shall submit a Design Report with their submission. The Design Report shall include the following information as a minimum:
 - Equipment Schedule
 - Valve and Piping Schedule





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- Instrument Schedule
- Technical brochures and datasheets of all equipment and instrumentation offered
- General Arrangement Drawings of all installations (Where the Contractor's offer varies from the Employer's outline design)
- A schedule of FAT's and a brief description of the proposed testing methodologies.
- 9.1.4.2 The Tenderer shall complete and return all schedules and technical datasheets included in this scope of work as well as the contract documents.

9.1.5 Detailed Design Report

- 9.1.5.1 It is a requirement of this contract extension that the Contractor shall submit a Detailed Design Report to the Engineer for review.
- 9.1.5.2 The Contractor shall not be entitled to proceed with the execution of the works until the Contractor has received comment (and address these comments if required to do so) from the Engineer in respect of the submitted Detailed Design Report.
- 9.1.5.3 The duration of the review period in which the Engineer can provide comment is 14 days from submission to the Engineer. If the Engineer fails to provide comment within this period, it will be deemed that no comment exists, and the Contractor may proceed with the execution of the works.
- 9.1.5.4 Note that the Engineer's review is not an approval and does not release the Contractor of any responsibility of liability associated with his design.
- 9.1.5.5 The design report shall as a minimum include the following:
 - Reference to all design codes, standard specification or the specifications where relevant.
 - A detailed methodology illustrating in detail how the works is to be executed.
 - All working drawings required for fabrication and installation of the works. Preliminary designs and drawings may be submitted with the design report.
 - Marked-up Piping and Instrumentation Diagram
 - Instrument index / I/O Lists
 - Cable Block Diagrams
 - Instrument Loop Diagrams
 - Instrument manuals and data sheets
 - Instrument Wiring Diagrams
 - Detailed functional design statement
 - PLC general arrangement diagrams plus wiring diagrams of these
 - Local Control Panel general arrangement Diagrams together with wiring diagrams
 - Detailed network diagrams if intelligent motor controllers utilised





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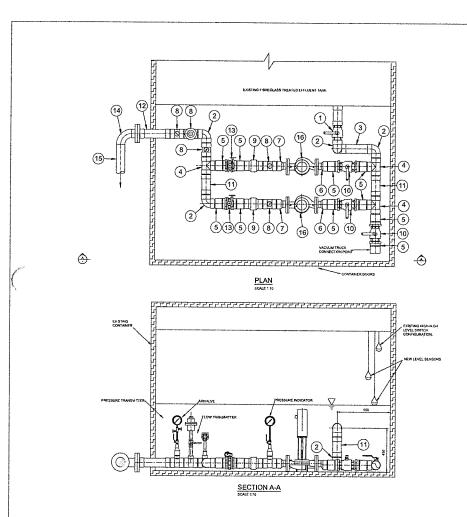
- Local control panel layout
- · Termination diagrams of all panels
- Power reticulation drawings
- Earthing reticulation drawings
- Motor control schematic diagrams
- Single Line Diagrams
- MCC termination diagrams
- MCC General Arrangement Drawings
- Cable Schedule
- Equipment List
- Earthing design
- Lightning Protection design
- Electrical Load List.
- 9.1.5.6 Upon completion of the works three (3) hard copies and one (1) PDF electronic copy of the signed design report and drawings shall be submitted to the Engineer. In addition, as per contract, native electronic copies (version 2012 or newer) shall be submitted of all drawings, as per Contract documents.
- 9.1.5.7 The Employer shall provide an AutoCAD drawing of the standardised project title blocks and a list of drawing requirements.
- 9.1.6 Operations and Maintenance Manuals
- 9.1.6.1 As per contract.
- 9.1.7 As Built Documentation
- 9.1.7.1 As per contract.





Baffinland Iron Mines Corporation: Mary River Expansion Project H353004

Appendix A Pump Station Layout



ITEM No.	DIAMETER	No. OF	TEM DESCRIPTION
1	3"	1	EXISTING OUTLET NOZZLE ON TANK FITTED WITH BALL VALVE: EXISTING NOZZLE TO THE IN WITH NEW 3" PAC BENO
2	a (5	PVC 90" ELBOW WITH SOCKET ON BOTH ENDS
3	3°	1	PVC PIPE 300mms
	3.	1	PYC EQUAL TEE PIECE WITH SOCKETS
8	3.		PVC VALVE SOCKET
4	102"	2	DN 3' X DN 2' PVC ECCENTRIC REDUCER.
7	3"x2"	2	DN 3" X DN 2" PVC CONCENTRIC REDUCER.
4,	Tut"	5	DN 9" X DN 1" PVC REDUCING TEE-PIECE WITH SOCKETS ON ALL ENDS.
	3" [2	PVO TYPE CHECK VALVE
10	i i	3	ON 3" FULL BORE PVC BALL VALVE
11	3"	3	PVC PIPE 200mm.
12	r	. 4	PVC PIPE 300mm FLANGED ON ONE END
13	3	2	ON 3" ACTUATED BUTTERFLY VALVE
14	3	•	HOPE SORTT, 90° ELBOW FLANGED ON ONE END
15	3"		NEW 3" PIPELINE
			PUMPS
16	-	2	DUTY AND STANDBY - GOULDS 165Y6F030 MULTISTAGE VERTICAL PUMP OR SIMILAR APPROVED

PIPE AND FITTING SPECIFICATIONS





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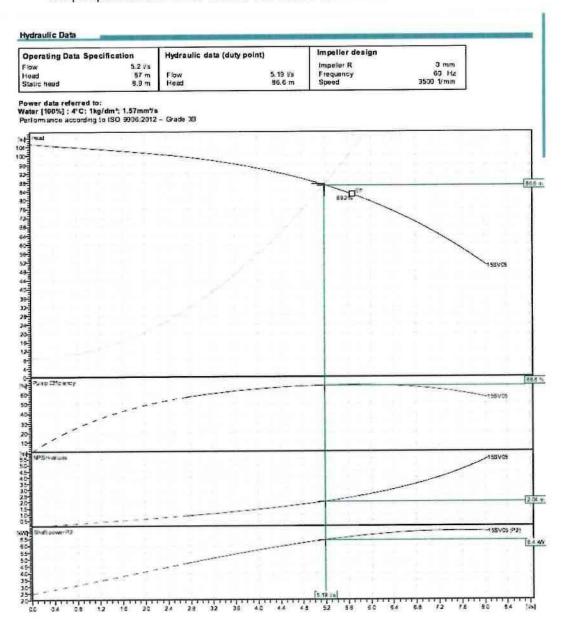
Appendix B Pump Curve





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The pump curve for a Gould 15SV5FC30 can be seen below:







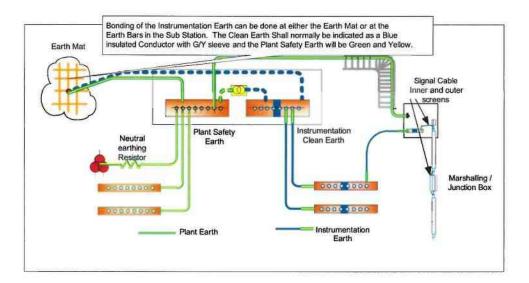
Baffinland Iron Mines Corporation: Mary River Expansion Project H353004

Appendix C Instrumentation Earthing Schematic





Baffinland Iron Mines Corporation: Mary River Expansion Project H353004





SECTION 1: GENERAL

ITP

INSPECTION TEST PLAN

Client:	Baffin Iron Mines	
Project name:	Baffinland- Mine Site	
(Sub-)Contractor:	NUNA- ADCO	
Contract No.:	CX-001	
CWPs:	Treated Effluent Pump Station	
ITP No.:	The second secon	39

		INSTALLATIONS 500 011	
Contractor QC		GF Promed Street Sales Assess Const. GF Promed Street Sales and Indiad to Care-Built Sales and S	
Approved By	Print	Sign	Date
		E C4 - No Furnis suprimission required - Company as out secun below.	
Client QA Approved By		Franken	
	Print	Honny Sign	Date

Verification Index: I = Inspection, R = Review Test Results, W = Witness Test, H = Hold All Constru ITP Closeout Verification Description & Date when ITP Activity leted for the scope or wo Verification Documents Activity Acceptance Criteria **Activity Description** cable to the installation Contr. QC Client QA
Designate Designate GENERAL 1 ary of Work Document (H353004 CX001-227-248-0001)/ Vendor O&M Contract Description, Issued IFC . S.I., FWO; CCO; Contract scope# - EPC # н н 1.1 Contract Description, Issued IFC Drawings, S.I., FWO; CCO; Contract # - EPC #) D.M CK Specifications, Drwgs and Codes as Pe Scope Summary of Work. RF-G-028R0 Adco Group Quality Assurance Manua TP and Verification Documentation Approval Inspection Test Reports) ITP Quality Verification Documentation Registry ICK & Site Quality Plan H353004-00000-130-028-0001. н н н RF-G-023R0 Print Index highlighted: All contract issued IFC drawings R YIC 1.3 IFC Drawing Index (Issued For Construction) to the Latest Revision D. ~4 Yallow for No Change Red for Red Line As-Built Adco Group Quality Assurance Manua & Site Quality Plan H353004-00000-DM. Signature Log RF-G-003R0 R R KK 130-028-0001 Adco Group Quality Assurance Manua Procedures Submitted and Approved (Pipe testing, Grouting, Bolt Tightening, etc.) 1.5 & Site Quality Plan H353004-09000 Approved Procedures H R 12 mg ric 130-028-0001 Adco Group Quality Assurance Manua & Site Quality Plan H353004-00000-130-028-0001. RE-G-008R0 Approved Construction Technical Deviations Direct Material Substitution Request All copies of issued technical Deviations W/R KK Adco Group Quality Assurance Manua Material and Equipment Receiving Report WIR Dem W/I 1.7 & Site Quality Plan H353004-00000-(MTRs must be attached for any Pipe. Structural Steel, and Fasteners) RF-G-002R0 130-028-0001 Adco Group Quality Assurance Manua & Site Quality Plan H353004-00000-130-028-0001 RF-G-010R0 CR-None Conformance Reports H/R H/R H/R QM Non Conformance Registry KK Adco Group Quality Assurance Manua & Site Quality Plan H353004-00000-130-028-0001. RF-G-011R0 1.9 QSR-Quality Surveillance Report KIL Quality Surveillance Registry Adoo Group Quality Assurance Manua & Site Quality Plan H353004-00000-CAR-Corrective Action Report R 1.10 Done. PAR-Preventative Action Report RF-G-031R0 Y IL 130-028-0001. Adco Group Quality Assurance Manua & Site Quality Plan H353004-00000-130-028-0001. Written Inspection Request Notification (24 Hour Notification required for W & H Points) RF-G-013R0 H w W Dung LIL Adco Group Quality Assurance Manua RF-G-015R0 Request For Information Registry & Site Quality Plan H353004-00000-130-028-0001 R 1.13 Н H (Listing RFI's issued pertaining to the work covered by this ITP) Request For Information Registry KIL Adco Group Quality Assurance Manua RF-G-022R0 & Site Quality Plan H353004-00000-130-028-0001 H353004-00000-200-Ding Preservation Registry RF-G-027R0 1.15 eservation/Maintenance нл I/R I/R KU PIPING 3 CSA B139, H353004-TM001-240-248 10. mg CIS-50-017 General Mechanical 3.1 Pipe support installation 0001rev2, ICF DWGS Cr CSA B139, H353004-TM001-240-248 CIS-60-004 Pipe work Installation VR I/R 3.3 Pipe Installation 0001rev2, ICF DWGS KIL CSA B139, H353004-TM001-240-248 ontrol Valve Installation CIS-75-Control Valves **VR** WR 0001rev2, ICF DWGS VV CIS-50-057 Bolt Torque CIS-60-010 Gaskets, and Bolto CSA B139, H353004-TM001-240-248 WIR WIR U-m Piping Gasket Installation and Flange Torque CSA B139, H353004-TM001-240-248 CIS-60-004 Pipe work Installation 1 3.7 Piping Identification 1 M 0001rev2_ICF DWGS Kr CSA B139. . H353004-CX001-227-248 Quy Service Testing Package TBD H н WR 0001 ICF DWGS ITP CLOSE OUT Quality Manual & Site Quality Plan RF-G-009R0 , Vendor O&M Manuals Com RF-G-017R0 RF-G-024R0 RF-G-025R0 (Vendor recommendations) (Applicable Site Specs and Code) Construction Completion (Contractor Punch list & Final Walk down Punch list) R R 6.1 IFIC

(IFC Drawings)

INSPECTION TEST PLAN

CLIENT QA DESIGNATE - Print/Sign

SCOPE OF WORK: PIPING INSTALLATIONS

DATE

Client:		Baffin Iron Mines]	Contractor QC	1/ 4 1/4	4-0				1000	
Project name:		Baffinland- Mine Site	Approved By		Kne Krahi	CCY			UO	U0U1324	
(Sub-)Contractor:		NUNA- ADCO			Print	Sign			Date		
Contract I	No.:	CX-001	1 .	ACTION NOT SHARE		- Maria Control	- Company				
CWPs:		Treated Effluent Pump Station		Client QA					1		
ITP No.:		39	9 Approved By				Winds				
			57.		Print	des contra	Sign		D	ate	
		Verification Index: I = Inspection, R = Review	Test Result	s, W = Witness	Test, H = Hold All Construc	tion Activ	vities				
Activity	Activity Description		Acceptance Criteria		Verification Documents (Use all check sheets applicable to the installation)	Verification Description			(Sign & Date when ITP Activity is completed for the scope or work		
No.						Contr. Const.	Contr. QC	Client QA	Contr. QC Designate	Client QA Designate	
1.13	As Built Drav	As Built Drawings complete (Rod Line Condition)		al & Site Quality Plan Site Specs and Code) C Drawings)	RF-G-023R0 Print Index highlighted; Yellow for No Change. Red for Red Line As-Built	иклн	UR	R	KK	D.M	
6.2	Certificate of	Certificate of Construction Completion		al & Site Quality Plant O&M Manuals, ecommendations) Site Specs and Code) C Drawings)	RF-G-019R0		R	R	kK	A.M	
6.3	Care & Custody Transfer Notification		Quality Manual & Site Quality Plan (Vendor O&M Manuals) (Vendor recommendations) (Applicable Site Spers and Code) (IFC Drawings)		RF-G-018R0		R	R	KK	Ce.m	
6.4	Declaration :	Declaration of Construction Completion		all & Site Quality Plan r O&M Manuals) ecommendations) Site Specs and Code) C Drawings)	RF-G-020R0		R	R	KK		
6.5	Turn Over Packages Review Completion Construction Verification Certificate Package Checklist Manufecturing Data Report (MDR Index)			rel & Site Quality Plan r O&M Manuals) ecommendations) Site Specs and Code) C Drawings)	RF-G-021R0		н	н	KK		
On the e	xecution of	the signatures below. The work package(s) and/or system(s)/sub-systemorphic considered	em(s) Identifie I fulfilled in its	d below shall be de entirety by the con	emed complete and activities wi tactor.	1			-		
CONTRAC	OR QC DES	ight / (() constructs	O^ M	mger	NaV 13 Zo19				E AND CLOSE	OUT:	
		4960				SYSTEM	SUB-SYSTE	EM.			

TITLE

An effective and/or acceptable ITP should provide the client with a high degree of confidence that the work will be or has been, completed in accordance with the applicable contract, IFC Drawings, Specs, Standards, Codes, Regulatory Authorities, Vendors are installation Procedures, etc. Therefore, a sufficient sampling of each (identified) activity must be inspected by the Contractor, in order to ensure that conformance is in fact, being activitied. ITPs help define the suddated documentation that will be produced by the Contractor for each activity. A sufficient number of activities must be identified in order to accurately reflect the Scope of Work.

Page 2 of 2

INSPECTION TEST PLAN

Client:	Baffin Iron Mines	
Project name:	Baffinland- Mine Site	.54
(Sub-)Contractor:	NUNA- ADCO	450.01
Contract No.:	CX-001	
CWPs:	Treated Effluent Pump Station	
ITP No.:		39

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Test H = Hold All Construc Verification Index: I = Inspection, R = Review Test Res ITP Closeout Verification Description **Verification Documents** Activity Acceptance Criteria **Activity Description** (Use all check sheet applicable to the install Contr. QC | Client QA | Designate No. Contr. GENERAL 1 ary of Work Document (H353004 CX001-227-248-0001V Vendor O&M Contract Description, Issued IFC Scope of Work (Contract Description, Issued IFC Drawings, S.I., FWO; CCO; Contract # - EPC #) Manuals S.I., FWO: CCO. н н H Manuals

Manuals

Contract terms and conditions, Issued
Specifications, Drwgs and Codes as Pe
Scope Summary of Work. KK DM Contract scope# - EPC # RF-G-028R0 Adco Group Quality Assurance Manu ITP Quality Verification Documentation ITP and Verification Documentation Approval н H 1.2 & Site Quality Plan H353004-00000-130-028-0001. tion Test Reports) KK Registry RF-G-023R0 Print Index highlighted. Yellow for No Change. Red for Red Line As-Built All contract issued IFC drawings H/R w R D. My IFC Drawing Index (Issued For Construction) to the Latest Revision 1.3 KIC doo Group Quality Assurance Man RF-G-003R0 R R R 10 My 1.4 Signature Log & Site Quality Plan H353004-00000 KK 130-028-0001. dco Group Quality Assurance Manu DM. Procedures Submitted and Approved Approved Procedures & Site Quality Plan H353004-00000 1.5 KK Pipe testing, Grouting. Bolt Tightening, etc.) 130-028-0001. RF-G-008R0 Adco Group Quality Assurance Manua Approved Construction Technical Deviations Direct Material Substitution Request 1.6 & Site Quality Plan H353004-00000-130-028-0001, All copies of issued technical H H W/R KK Deviations Adco Group Quality Assurance Manua & Site Quality Plan H353004-00000-Material and Equipment Receiving Report (MTRs must be attached for any Pipe, Structural Steel, and Fasteners) PE-C-001R0 н WA W/R 1.7 130-028-0001. Adco Group Quality Assurance Manua H/R H/R H/R 1.8 NCR-None Conformance Reports & Site Quality Plan H353004-00000-Non Conformance Registry Ca 130-028-0001 Adco Group Quality Assurance Manua & Site Quality Plan H353004-00000-RF-G-011R0 SR-Quality Surveillance Report R Quality Surveillance Registry 66 130-028-0001 Adco Group Quality Assurance Manua & Site Quality Plan H353004-00000-130-028-0001. CAR-Corrective Action Report RF-G-030R0 H R 1.10 KIL PAR-Preventative Action Report Adco Group Quality Assurance Manu Test Equipment Log н R 1.11 Test Equipment Calibration Certification & Site Quality Plan H353004-00000kr 75-015 Calibration of Instrume 130-028-0001 Adco Group Quality Assurance Manu-& Site Quality Plan H353004-00000-130-028-0001. RF-G-013R0 Inspection Request Registry Written Inspection Request Notification 1.12 CK (24 Hour Notification required for W & H Points) Adco Group Quality Assurance Manua & Site Quality Plan H353004-00000-130-028-0001 Request For Information Registry (Listing RFI's issued pertaining to the work covered by this ITP) RF-G-015R0 H R 1.13 Request For Information Registry ICK Adco Group Quality Assurance Manual & Site Quality Plan H353004-00000-130-028-0001.H353004-00000-200-RF-G-022R0 KK UR VR. servation Registry RF-G-027R0 HA 078-0015 2.0 **ELECTRICAL (LOW VOLTAGE)** CSA(CEC,M421), H353004-00000-200-CIS-70-035 Electrical Devices 2.1 ow Voltage Equipment, MCC, PDP, Switchgear & VFDs Install Test Record 078-0017,H349000-S018626, ICF DWGS KK CSA/CEC.M421). H353004-00000-20 CIS-70-007 (CABLE). I/R ower Cables Installation 078-0017,H349000-S018626, ICF NR. K/L CTS-70-003 (MEGGER) DWGS SA(CEC,M421), H353004-00000-200 078-0017,H349000-S018626, ICF DWGS CIS-70-007 (CABLE), CTS-70-003 (MEGGER) Control Cable installation 2.10 KIL CSA(CEC.M421), H353004-00000-200 RF-E-031R0 2.12 Motor Installation 078-0017.H349000-S018626, ICF RF-E-032R0 MIL DWGS RF-E-033R0 Power and Control Cable Schedule R (IFC Cable Schedule) CIL 2.24 (IFC Cable Schedule) (As per IFC Cable Schedule) INSTRUMENTATION 4 CSA(CEC,M421), H353004-00000-200-078-0017,H349000-S018626, ICF CIS-70-035 Electrical Devices-Powered Instrumentation Installation (Electrical) 4.1 11/1 (PIT. POIT. LIT. ETC) General Inspection OWGS

INSPECTION TEST PLAN

SCOPE OF WORK: **ELECTRICAL AND INSTRUMENTATION INSTALLATION**

Client:	Baffin Iron Mines		10	1.
Project name:	Baffinland- Mine Site	Contractor QC	KNIE Krali	1011
(Sub-)Contractor:	NUNA- ADCO	Approved By	Print	Sign
Contract No.:	CX-001			
CWPs:	Treated Effluent Pump Station			
ITP No.:	39	Client QA		
		Approved By		

Contractor QC	Kne Krals	KID	Way (320
Approved By	Print	Sign	Date

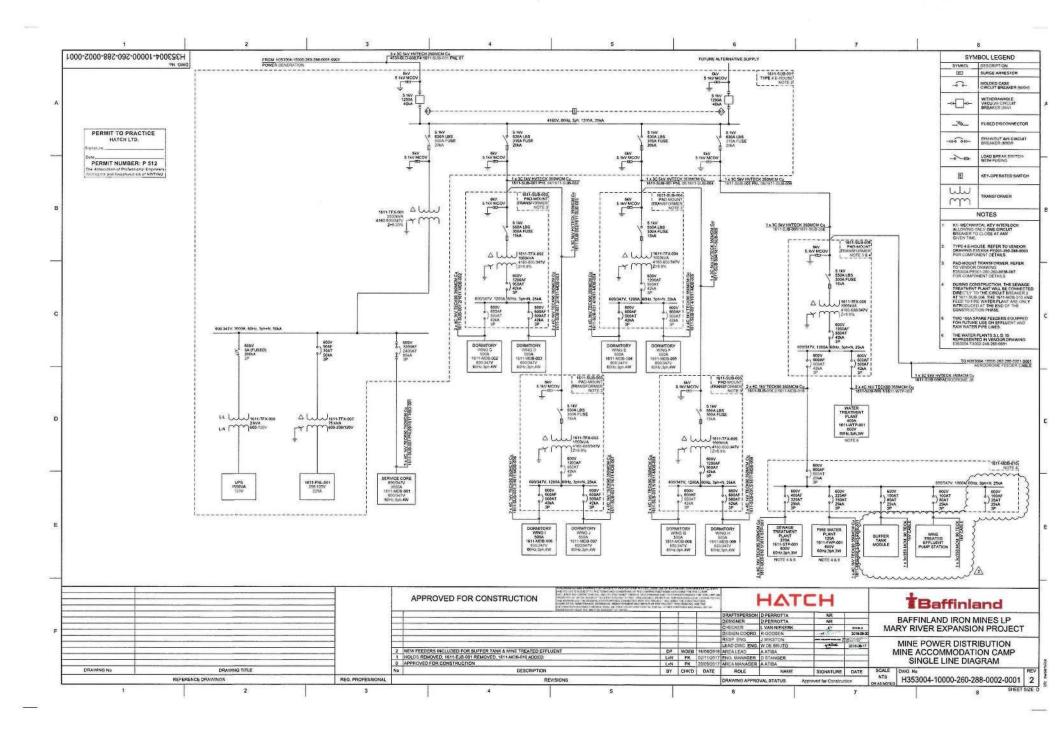
Print Date Sign Verification Index: I = Inspection, R = Review Test Res ITP Closeout Verification Description **Verification Documents** Activity **Activity Description** Acceptance Criteria No. cable to the insta Contr. QC Client QA
Designate Designate QC CSA(CEC,M421), H353004-00000-200 RF-I-004R0 D.M. (Pressure Gauges: Sight Glass; Level Floats; Orifice Plates; Temperature Gauges; Strain Gauges, 4.2 078-0017,H349000-S018626, ICF I/R 1/R KK RP-I-007R0 PRVs) DWGS CSA/CEC.M421). H353004-00000-200 Flow Meter and flanged Instrument installation torques (Use Instrument manufacturer torque recommendations) 4.3 078-0017,H349000-S018626, ICF RF-P-005R0 н INHIN W KK DWGS CSA(CEC,M421), H353004-00000-200-078-0017,H349000-S018626, ICF DWGS Instrumentation - Bench Test of All Instruments (Control Valves, Flow Meters, etc.) Manufacturer Data Sheets Calibration Certifications 4.5 KIC SA(CEC,M421), H353004-00000-200 078-0017.H349000-S018626, ICF Instrumentation Cable Termination (Point to Point all cables) RF-I-010R0 VR. н w DWGS KK Instrument Grounding (Flow meter and all required instruments) CSA(CEC,M421), H353004-00000-200 RF-I-002R0 4.10 078-0017.H349000-S018626.ICF 1 I/R (isolated grounding) (Cable shield isolation) RF-I-006R0 DWGS strumentation Junction Box Installation and Panels SA(CEC,M421), H353004-00000-200 (Marshalling Panels, Control Panels, PLCs Installation, Communication Cabinet, Telephone, Pagir System, Data Processing Systems) 078-0017,H349000-S018626, ICF DWGS RF-I-008R0 101 CSA(CEC,M421), H353004-00000-200 078-0017,H349000-S018626, ICF Instrument Cold Loop Testing (Stage 1 Pre-commissioning) 4.15 W RF-I-011R0 1(1(DWGS CSA(CEC,M421), H353004-CX001-Instrument Hot Loop Testing 4.16 227-248-0001.H349000-S018626, ICF TBA MR W W/R (Stage 2 commissioning) DWGS 1(1(CSA(CEC,M421), H353004-00000-200 078-0017,H349000-S018626, ICF DWGS 4.17 As per Issued with scope of work R As per IFC Instrument list) CIC CSA(CEC,M421), H353004-00000-200 078-0017,H349000-S018626, ICF Instrument Cable Schedule (As per IFC Cable Schedule) As per Issued with scope of work R R KK am. DWGS 6 ITP CLOSE OUT & Site Quality Plan H353004-00000-130-028-0001./ Vendor O&M Manuals, RF-G-017R0 Construction Completion (Contractor Punch list & Final Walk down Punch list) R (Vendor recomm RF-G-024R0 kic 1 mg (CSA(CEC.M421), H353004-00000-RF-G-025R0 & Site Quality Plan H353004-00000-RF-G-023R0 Print Index highlighted: Yellow for No Change, Red for Red Line As-Built 130-028-0001 / Vendor O&M Manuals 1.13 As Built Drawings complete (Red Line Condition) I/R/H I/R D.M. CK 200-078-001Z-M340000-S049626). & Sile Quality Plan H353004-00000-130-028-0001 / Vendor O&M Manuals 6.2 Certificate of Construction Completion (Vendor recommendations) (CSA(CEC,M421), H353004-00000-(K & Site Quality Plan H353004-0000-130-028-0001 / Vendor Q&M Manuals 6.3 Care & Custody Transfer Notification RF-G-018R0 R (Vendor recom 1110 (CSA/CEC.M421) H353004-00000-200 9786 C17. MJ 48900 SCE16260 & Site Quality Plan H353004-00000-130-028-0001 / Vendor O&M Manuals 6.4 Declaration of Construction Completion RF-G-020R0 R (Vendor recommendations) KIC (CSA(CEC,M421), H353004-00000-200-0128-0012.H3/19000-S0146361 & Site Quality Plan H353004-00000-130-028-0001 / Vendor O&M Manuals Turn Over Packagos. Review Completion Construction Verification Certificate Package Checklist Manufacturing Data Report (MDR Index) RF-G-021R0 1010 (Vendor recommendations) (CSA(CEC,M421), H353004-00000-On the execution of the signatures below. The work package(s) and/or system(s)/sub-system(s) identified below shall be deemed considered fulfilled in its entirety by the contactor. led below shall be deemed complete and activities within this approved Inspection Test Plan(ITP) will been WORK PACKAGE(S) COMPLETE AND CLOSED OUT: Kyle Krahl ONTRACTOR QC DESIGNATE - Print/Sign NOV 19 2019 construction manager SYSTEM/SUB-SYSTEM CLIENT QA DESIGNATE - Print/Sign

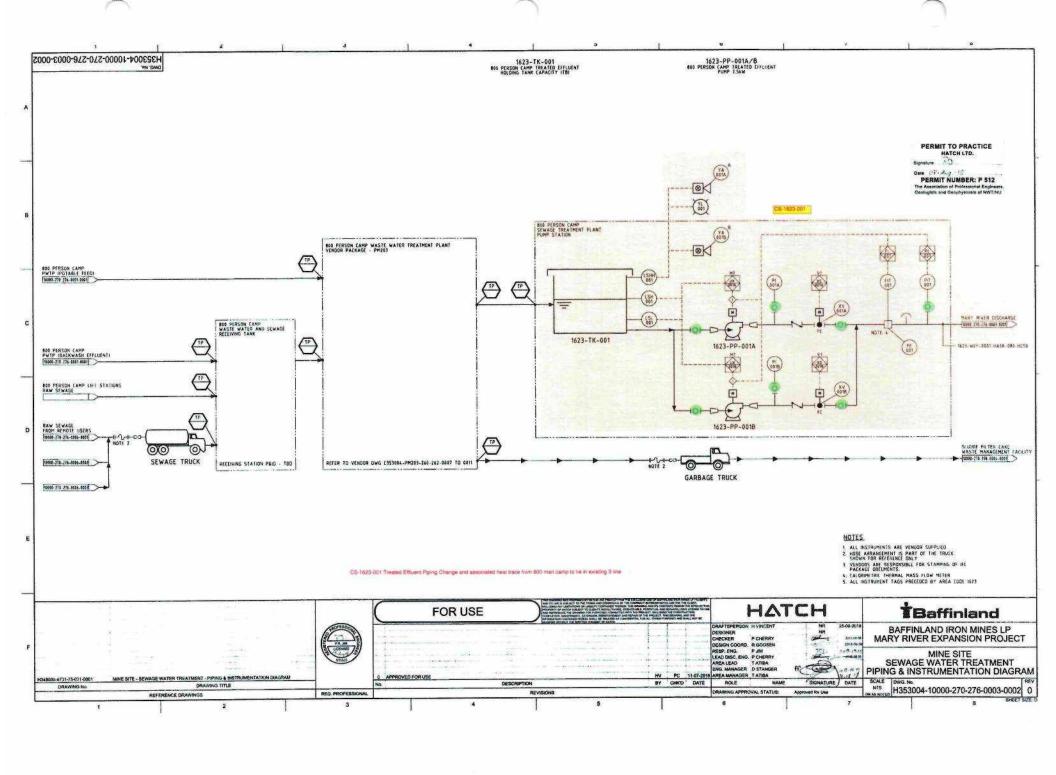


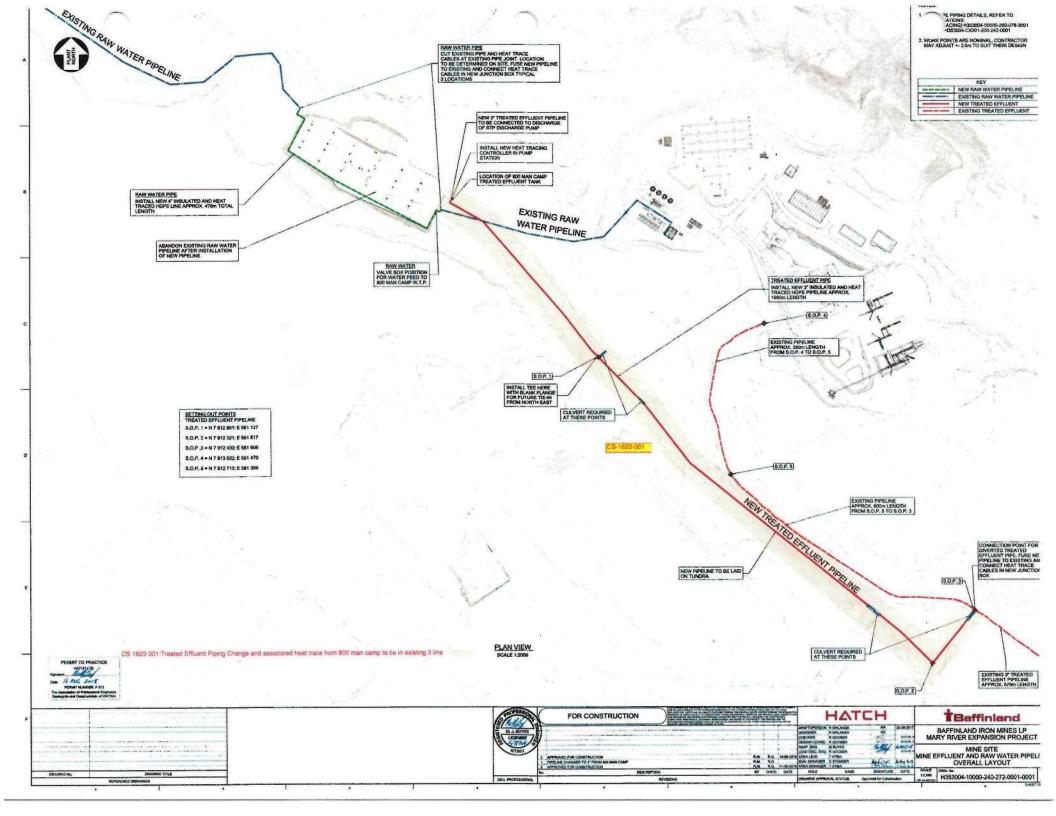
IFC Drawings

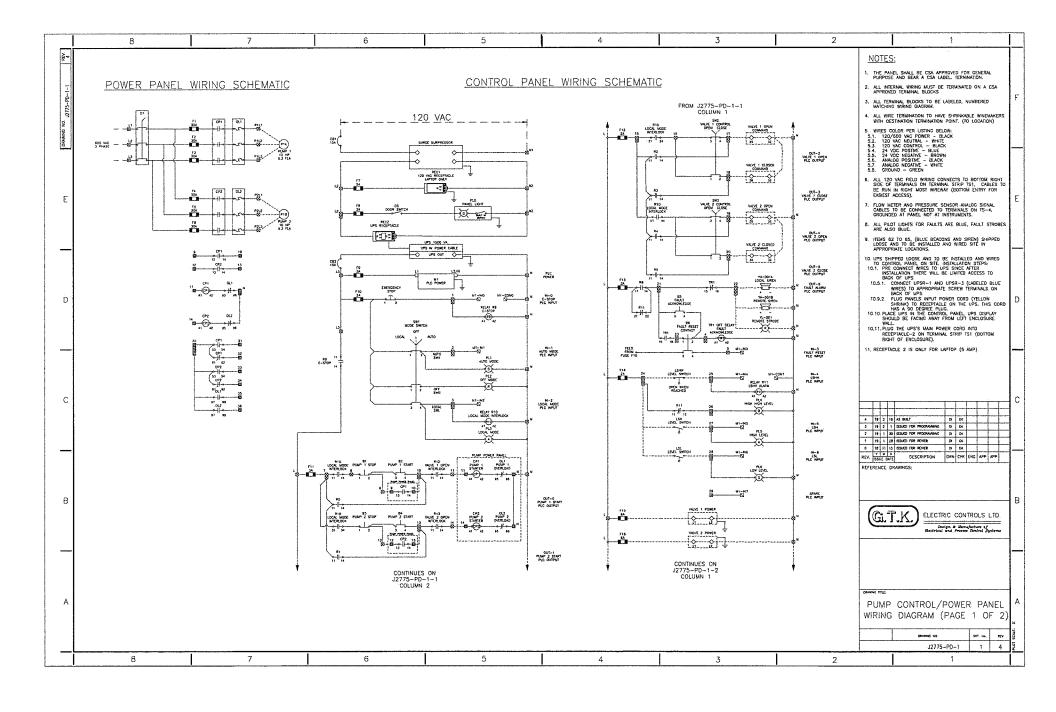
IFC DRAWING INDEX

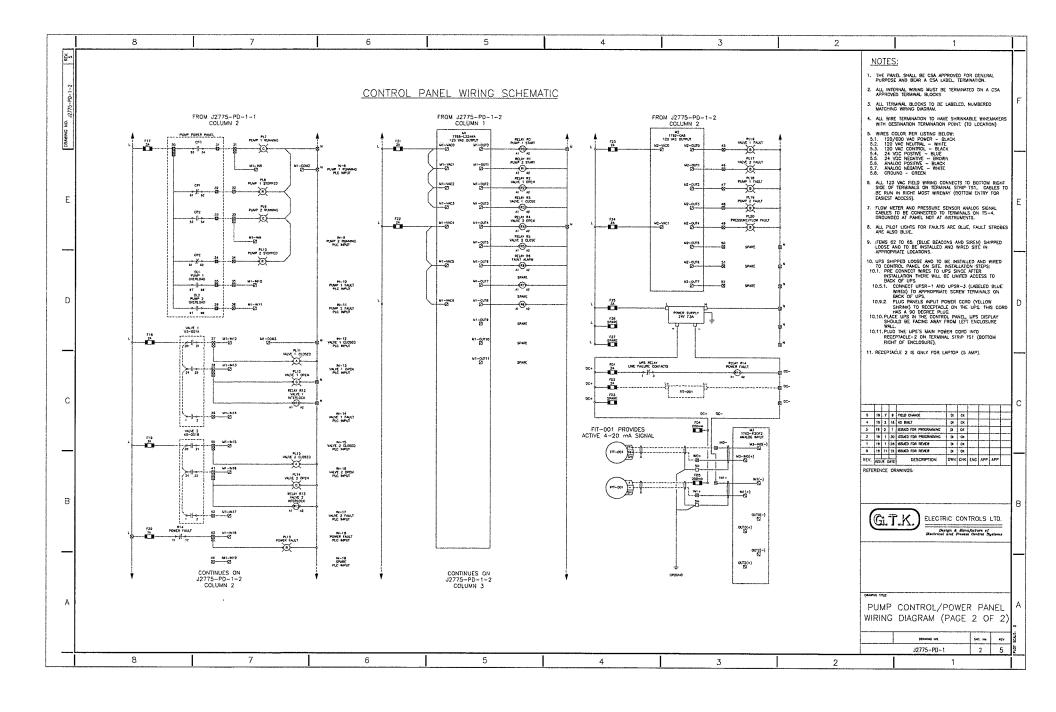
Transmittal No.	Transmittal Date	Construction work Package (CWP)	Discipline	Document type	Status	Complete Drawing Number / Document Number	Drawing / Document Description	Revision	Format	Date Received	Distributed and Old Revision Archieved
		CWP-041	Electrical	Approved for Construction		H353004-10000-260-	Mine Power Distribution Mine Accommodation Camp	2			
						288-0002-0001_2	Single Line Drawing				
						H353004-10000-270-	Mine Site Sewage Water Treatment Piping &				
		CWP-041	Electrical	Approved For Use		276-0003-0002	Instrumentation Diagram	0		}	
						H353004-10000-240-	Mine Site Mine Effluent And Raw Water Pipeline Overall	1			
		CWP-041	Electrical	Approved for Construction		272-0001-0001	Layout	1			
			Electrical			J2775-PD-1 SHT 1	Pump Control/Power Panel Wiring Diagram	4			
			Electrical			J2775-PD-1 SHT 2	Pump Control/Power Panel Wiring Diagram	5			
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Signature Log

SIGNATULE LOG

CONTRACTOR: Adco	CONTRACT NO.:	CWP:CVR-041	SUBSYSTEM: Treated Effluent
LOCATION: Mine Treated Effluent Pump Station			The second secon

NAME	SIGNATURE	INTIAL	POSITION	DATE (DD/MM/YY
Andrew Hamilton	an	AHM	Construction Manager	31/08/2019
Jared Polachek	Chil	9	Pipe Fitter	15/09/2019
Kris Krahl	11/	KIC	Electrician	3//08/2019
Kyle Krahl	1 Kul	XX	Construction manager	12/11/2019
Derela Redland	77	DP.	QA	18/11/19

CONTRACTOR QC DESINATE - Print/Sign	Construction Manager	Nov 12, 7019
CLIENT QA DESIGNATE - Print/Sign	TITLE	18/1/19
CEIENT QA DESIGNATE - Printisign	TITLE	DATE



Quality Surveillance Report

QUALITY SURVEILLANCE REPORT REGISTRY

QSR OSR NO. ISSUE TO	D CONTRACTOR	CONCTRACT NO.	AREA	LOCATION	CWP/ SUB-SYSTEM	ORIGINATOR	SURVEILANCE TYPE	DISCIPLINE	EQUIP. NO.	EQUIP. DESC.	SPEC. NO.	DRAW. NO.	DESCRIPTION OF ITEMS OR WORK SURVEILANCE	ROOT CAUSE	DISPOSTION PROPOSED	CORRECTIVE ACTION REPORT NO.	PREVENTATIVE ACTION REPORT NO.	DISPOSITION BY:	DISPOSITION BY TITLE:	DISPOSITION DATE:	OPEN CLUS
001	ADCO	3804 MEIP	Mine Site	Treated Effluent Pump Station	CVR-041	Andrew Hamilton	Workmanship/Quality	Mechanical					Leaking pipe spool	Bad glue joint	Repair	CVR-41-01	ALFORTINO.	Jared Polachek	Pipe Fitter		DATE DAT
002	ADCO	3804 MEIP	Mine Site	Treated Effluent Pump Station	CVR-041	Kyle Krahl	Material/Equipment	Electrical	1623-XV- 001A	120V motorized butterly valve			Broken valve handle	Damaged while others manually drained tank	Repair	CVR-41-02	1. And the second secon				Ang 15
003	ADCO	3804 MEIP	Mine Site	Treated Effluent Pump Station	CVR-041	Kyle Krahl	Material/Equipment	Electrical	1623-XV- 001B	120V motorized butterly valve			Broken valve handle	Damaged while others manually drained tank	Repair	CVR-41-03			~~~		Aug 15
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007 008 009 010 011 012 013 014 015 016 017 018 019 020 021 022 023 024 025 026 027 028 029 030 031 032 033 034 035 036 037 038									 												
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Page 1 of 1

QUALITY SURVIELLANCE REPORT

QSR ISSUED TO: A				QSR NO.:	001
Section Company of the Company of th	DCO	ORIGINATOR:	syle Krowl		
CONTRACTOR:	DCO		0		
CONTRACT NO.: 3	804 MEIP	SIGNATUTE	10-1		
LOCATION: T	reated Effluent Pump Station	7757			
AREA: Mine Site					
CWP/SUBSYSTEM: C	VR-041	DATE:	Aug 15	2-19	
		REFERENCE DATA			
QUALITY SURVIELLANG	DE TYPE: Workmanship/Qual	lity			
CONSTRUCTION DISCI	PLINE: Mechanical				
EQUIPMENT NO.: 0					
EQUIPMENT DESCRIPT	ION: 0				
SPECIFICATION NO.:					
DRAWING NO.:					
7	DISCRIPTIO	N OF QUALITY SUR	VIELLANCE		
		POOT CAUSE			
Bad glue joint		ROOT CAUSE			
		ROOT CAUSE	POSITION		
Bad glue joint DISPOSITION PROPOSE			POSITION		
		SURVIELLANCE DIS	POSITION		
	CORRECTIVE ACTIVER:	SURVIELLANCE DIS			
DISPOSITION PROPOSE DISPOSITION AS P	CORRECTIVE ACT	SURVIELLANCE DIS			
DISPOSITION PROPOSE DISPOSITION AS P	CORRECTIVE ACT	SURVIELLANCE DIS	CVR-41-01	DATE: SO	157019
DISPOSITION PROPOSE DISPOSITION AS P	CORRECTIVE ACT	SURVIELLANCE DIS	CVR-41-01	DATE: SQ	15 2019
DISPOSITION PROPOSE DISPOSITION AS P	CORRECTIVE ACTION PREVENTATIVE ACTION DISPOSITION ACTION	SURVIELLANCE DIS	CVR-41-01 0 D QSR CLOSE	OUT	
DISPOSITION PROPOSE DISPOSITION AS P	CORRECTIVE ACTION PREVENTATIVE ACTION DISPOSITION ACTION	SURVIELLANCE DIS	CVR-41-01 0 D QSR CLOSE	OUT	Nov 14, 2
DISPOSITION PROPOSE DISPOSITION AS P NAME: Kylc Kra	CORRECTIVE ACTION PREVENTATIVE ACTION DISPOSITION ACTION	SURVIELLANCE DIS	CVR-41-01 0 D QSR CLOSE	OUT	Nov 14, 2
DISPOSITION PROPOSE DISPOSITION AS P WAME: Kyll Kro	CORRECTIVE ACTION PREVENTATIVE ACTION DISPOSITION ACTION NATE - Print/Sign	SURVIELLANCE DIS	CVR-41-01 0 D QSR CLOSE Stewater	OUT	NOV 14, 2
DISPOSITION PROPOSE DISPOSITION AS P NAME: Kyll Kock CONSTRUCTION DESIGN	CORRECTIVE ACTION PREVENTATIVE ACTION DISPOSITION ACTION NATE - Print/Sign	SURVIELLANCE DIS	CVR-41-01 0 D QSR CLOSE Stewater	OUT	Nov 14, 2

Page 1 of 1

QUALITY SURVIELLANCE REPORT

QSR ISSUED TO:	ADCO		ADJANTER	and the same of	QSR NO.:	002
Common Assessment all Assessment	ADCO		ORIGINATOR: K	yle Krahl		
	3804 MEIP		CARROLA WILLIAMS	10	0	
Compression on			SIGNATUTE:	- 1C L	1	
AREA: Mine Site	Treated Eff	uent Pump Station				
	mm 044					
CWP/SUBSYSTEM:	CVR-041		DATE:	Auges ;	2019	
			EFERENCE DATA	1		
QUALITY SURVIELLA						
CONSTRUCTION DISC		Electrical				
HORSE WASHINGSES	0					
EQUIPMENT DESCRIP		120V motorized bufferly	y valve			
SPECIFICATION NO.:						
DRAWING NO.:						
		DISCRIPTION	OF QUALITY SUR	VIELLANCE		
Jamaged while others n	nanually dra		ROOT CAUSE		-	
Damaged while others n	nanually dra		ROOT CAUSE			
Damaged while others n	nanually dra	ined tank		POSITION		
Damaged while others in		QUALITY SUI	RVIELLANCE DIS	POSITION		
	SED:	QUALITY SUI Repai CORRECTIVE ACTION	RVIELLANCE DIS	POSITION CVR-41-02		
DISPOSITION PROPOS	SED:	QUALITY SUI	RVIELLANCE DIS			
DISPOSITION PROPOS DISPOSITION AS	SED:	QUALITY SUI Repai CORRECTIVE ACTION	RVIELLANCE DIS	CVR-41-02	DATE	
DISPOSITION PROPOS	PER:	QUALITY SUI Repai CORRECTIVE ACTION PREVENTATIVE ACTIC TITLE:	RVIELLANCE DIS REPORT.: NN REPORT NO.:	CVR-41-02		
DISPOSITION PROPOS DISPOSITION AS	PER:	QUALITY SUI Repai CORRECTIVE ACTION PREVENTATIVE ACTIO TITLE: DSITION ACTION (RVIELLANCE DIS	CVR-41-02 0 D QSR CLOS	E OUT	
DISPOSITION PROPOS DISPOSITION AS IAME:	PER:	QUALITY SUI Repai CORRECTIVE ACTION PREVENTATIVE ACTIO TITLE: DSITION ACTION O	RVIELLANCE DIS	CVR-41-02 0 D QSR CLOS	E OUT	
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DISPOSITION PROPOSITION AS IAME:	PER: DISPO	QUALITY SUI Repai CORRECTIVE ACTION PREVENTATIVE ACTIO TITLE: DISTION ACTION O	RVIELLANCE DIS	CVR-41-02 0 D QSR CLOS	E OUT	DATE
DISPOSITION PROPOS DISPOSITION AS IAME:	PER: DISPO	QUALITY SUI Repai CORRECTIVE ACTION PREVENTATIVE ACTIO TITLE: DISTION ACTION O	RVIELLANCE DIS	D QSR CLOS	E OUT	
DISPOSITION PROPOSITION AS AME: ONSTRUCTION DESIGNATION OF THE PROPOSITION OF THE PROPOS	DISPO	QUALITY SUI Repai CORRECTIVE ACTION PREVENTATIVE ACTION TITLE: DISTION ACTION O	RVIELLANCE DIS REPORT.: ON REPORT NO.: COMPLETION AN TITL	D QSR CLOS	EOUT	DATE DATE V - Www.1

* Repair outstanding. Material not on site
Job suspended

QUALITY SURVIELLANCE REPORT

QSR ISSUED TO:	ADCO:		***	QSR NO.:	003
EMENORSHIP WAREHOUSE	ADCO		ORIGINATOR: Kyle Krahl		
	3804 MEIP		10	0	
			SIGNATUTE:	-	
	Treated Eth	uent Pump Station			
AREA: Mine Site			1000000 10 0 000000000000000000000000000		
CWP/SUBSYSTEM:	GVR-041		DATE: Avg 15	2019	
Samuel Control		1/4	REFERENCE DATA		
QUALITY SURVIELLA					
CONSTRUCTION DISC	CIPLINE:	Electrical			
EQUIPMENT NO.:	0				
EQUIPMENT DESCRIP	PTION:	120V motorized butte	erly valve		
SPECIFICATION NO.:					
DRAWING NO.:					
		DISCRIPTION	OF QUALITY SURVIELLAND	E	
Damaged while others n	nanually dra	ined tank	ROOT CAUSE		
Damaged while others n	nanually dra	ined tank	ROOT CAUSE		
Damaged while others n	nanually dra				177
		QUALITY SI	URVIELLANCE DISPOSITION		
	SED:	QUALITY SE Rep CORRECTIVE ACTIO	URVIELLANCE DISPOSITION DBIT N REPORT.: CVR-41-03		
DISPOSITION PROPOS	SED:	QUALITY SI	URVIELLANCE DISPOSITION DBIT N REPORT.: CVR-41-03		
DISPOSITION PROPOS DISPOSITION AS	SED:	QUALITY SE Rep CORRECTIVE ACTION PREVENTATIVE ACT	URVIELLANCE DISPOSITION UBIF IN REPORT.: CVR-41-03 TION REPORT NO.: 0	DATE:	
DISPOSITION PROPOS	SED:	QUALITY SE Rep CORRECTIVE ACTION PREVENTATIVE ACT	URVIELLANCE DISPOSITION UBIF IN REPORT.: CVR-41-03 TION REPORT NO.: 0	DATE:	
DISPOSITION PROPOSITION AS NAME:	PER:	QUALITY SE Rep CORRECTIVE ACTION PREVENTATIVE ACTION TITLE DISTION ACTION	URVIELLANCE DISPOSITION BIF IN REPORT.: CVR-41-03	DATE:	
DISPOSITION PROPOSITION AS NAME:	PER:	QUALITY SE Rep CORRECTIVE ACTION PREVENTATIVE ACTION TITLE DISTION ACTION	URVIELLANCE DISPOSITION UBIT IN REPORT.: CVR-41-03 TION REPORT NO.: CUR-41-03 TON REPORT NO.: CUR-41-03	DATE:	DATE
DISPOSITION PROPOSITION AS NAME:	PER:	QUALITY SE Rep CORRECTIVE ACTION PREVENTATIVE ACTION TITLE DISTION ACTION	URVIELLANCE DISPOSITION DISPOSITION REPORT.: CVR-41-03 TION REPORT NO.: E I COMPLETION AND QSR CLO	DATE:	DATE
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DISPOSITION PROPOS DISPOSITION AS NAME:	PER: DISPO	QUALITY SI Rep CORRECTIVE ACTION PREVENTATIVE ACT. TITLE DISTRION ACTION	URVIELLANCE DISPOSITION DIST IN REPORT.: CVR-41-03 TON REPORT NO.: 0 E: I COMPLETION AND QSR CLO TITLE	DATE: DSE OUT	ale-values

Repair outstanding. Material not on Site
Job suspended



Corrective Action Report

CORRECTIVE ACTION REPORT REGISTRY

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CAR ISSUI	D CONTRA	ACTOR	CONCTRACT NO.	AREA	LOCATION	CWP/ SUB- SYSTEM	ORIGINATOR	REPORT	ORIGINATING REPORT NO.:	SURVEILANCE TYPE	DISCIPLINE	EQUIP. NO.	EQUIP. DESC.	SPEC. NO.	DRAW.	DESCRIPTION OF NON- CONFORMANCE, SURVIELLANCE OR AUDIT	ROOT CAUSE	CORRECTIVE ACTION	ENGINEERING REVIEWED AND APPROVED	ENGINEERING COMMENTS	COMMENTS	ENGINEER NAME	ENGINEER TITLE	ENGINEER REVIEW DATE	OPEN	CLOSE
001	ADO	co	3B04 MEIP	Mine Site	Treated Effluent Pump Station	CVR-041	Andrew Hamilton	QUALITY SURVIELLANCE	CVR-41-01	Integrity/Testing	Piping		*		The state of the s	Leaking pipe spool	Bad glue joint	Repair	N/A		Interal deficiency before turnover.	N/A	N/A	N/A	Dug 15	5034
002	ADO	со	3804 MEIP	Mine Site	Treated Effluent Pump Station	CVR-041	Kyle Krahl	QUALITY SURVIELLANCE	CVR-41-02	Material/Equipment	Electrical	1623-XV-001A	120V motorized butterly valve			Broken valve handle	Damaged while others manually drained tank	Repair	N/A	N/A	Interal deficiency before turnover.	N/A	N/A	N/A	Aug	
003	ADO	co :	3B04 MEIP	Mine Site	Treated Effluent Pump Station	CVR-041	Kyle Krahl	QUALITY SURVIELLANCE	CVR-41-03	Material/Equipment	Electrical	1623-XV-001B	120V motorized butterly valve			Broken valve handle	Damaged while others manually drained tank	Repair	N/A		Interal deficiency before turnover.	N/A	N/A	N/A	445	
004 005 006 007 008 009 010 011 012 013 014 015 016 017 018 019 020 021 022 023 024 025 026 027 028 033 033 034 035 036 037 038																									 	
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Page 1 of 1

CORRECTIVE ACTION REPORT

				CAR NO.: 001
CAR ISSUED TO:	ADCO		ORIGINATOR: KILL KIGH	J
CONTRACTOR:	ADCO		1210	2
CONTRACT NO.:	3804 MEIP		SIGNATURE: /	2
LOCATION:	Treated Efflue	nt Pump Station		
AREA:				
CWP/SUBSYSTEM:	CVR-041		DATE: Aug 15	2019
		RI	EFERENCE DATA	6011
ORIGINATING REPO	RT:	as we were	REPORT	NO.: CVR-41-01
QUALITY SURVIELL	ANCE TYPE:	Workmanship/Quality		WINNER
CONSTRUCTION DIS	SCIPLINE:	Piping		
EQUIPMENT NO.:	0			
EQUIPMENT DESCR	IPTION:	Pipe Spool		
SPECIFICATION NO.		The state of the s		
DRAWING NO.:				
	DESCR	IPTION OF NON-CONEC	RMANCE, QUALITY SURVEILANCE	OB AUDIT
Leaking pipe spool			MINIOL, WOALITT SURVEILANCE	JR AUDIT
			DOOT ONLINE	
Bad glue joint			ROOT CAUSE	
saa gide jonie				
		COF	RRECTIVE ACTION	
Repair				
		ENGINEERING RE	VIEW OF CORRECTIVE ACTION	
		IEWED AND APPROVED:	COMMENTS: ((SEE BELOW)
nteral deficiency before	e turnover.			
IAME:			TITLE:	DATE:
		CORRECTIVE ACTION	COMPLETION AND NCR CLOSE OUT	
		E		
Kyle	Crahy	1000	TITLE	NOV 14 2014
ONSTRUCTION DES	IGNATE - Print/	Sign	TITLE	DATE
		1		
ONTRACTOR QC DE	SIGNATE - Prin	t/Sign	TITLE	DATE
A. Moss	++	I		
	Deint/Class // /		cM	14-Nov-19
LIENT DESIGNATE -	Print/Sign (If Ap	olicable)	TITLE	DATE

CORRECTIVE ACTION REPORT

			CAR NO.:	002
CAR ISSUED TO:	ADCO	ORIGINATOR: Kyle Krah	L	
CONTRACTOR:	ADCO		. 1	
CONTRACT NO.:	3804 MEIP	SIGNATURE:		
LOCATION:	Treated Effluent Pump Station	8-		
AREA:				
CWP/SUBSYSTEM:	CVR-041	DATE:		
	RI	EFERENCE DATA	Medan Company	,
ORIGINATING REPO	RT:	REPO	ORT NO.:	VR-41-02
QUALITY SURVIELL	ANCE TYPE: Workmanship/Quality			
CONSTRUCTION DIS	SCIPLINE: Electrical			
EQUIPMENT NO.:	1623-XV-001A			
EQUIPMENT DESCR	IPTION: 120V motorized butterly valve			
SPECIFICATION NO.	A A			
DRAWING NO.:				
	DESCRIPTION OF NON-CONFO	RMANCE, QUALITY SURVEILAN	CE OR ALIDIT	
Broken valve handle		The state of the s	OL OK ADDIT	
2015 - 2015 - A		ROOT CAUSE	190 (n)	***************************************
Damaged while others	manually drained tank			
period control is	000	PDFOTIVE ACTION		VI 90
Repair		RRECTIVE ACTION		
	Note Cepatrou	tstanding, material n	ot on Stte	
	Job Suspended			
	710			
	ENGINEERING RE	VIEW OF CORRECTIVE ACTION		
ENG	INEERING REVIEWED AND APPROVED:	COMME	NTS: (SEE BELOW)	
Interal deficiency befor	e turnover.		A	
NAME:		TITLE:	DATE:	
	CORRECTIVE ACTION	COMPLETION AND NCR CLOSE		
3725	./ 0			
Kyle Krai		Construction man	ager Nov	13 2019
CONSTRUCTION DES	SIGNATE - Print/Sign	TITLE	3	DATE
	1			
CONTRACTOR QC DI	ESIGNATE - Print/Sign	TITLE	er en	DATE
	I	WMARKES		PATE
NIENT DESIGNATE				
LIENT DESIGNATE	Print/Sign (If Applicable)	TITLE		DATE

CORRECTIVE ACTION REPORT

				CAR NO.:	003
CAR ISSUED TO:	ADCO	1.0	ORIGINATOR: Kyle Krahl		
CONTRACTOR:	ADCO			1	
CONTRACT NO.:	3804 MEIP		SIGNATURE: // -	1	
LOCATION:	Treated Effluent Pur	np Station	y 		
AREA:					
CWP/SUBSYSTEM:	CVR-041		DATE:		
	- 11	REFE	RENCE DATA		
ORIGINATING REPO	ORT:		REPORT NO),;	CVR-41-03
QUALITY SURVIELL	ANCE TYPE: Works	manship/Quality			
CONSTRUCTION DI	SCIPLINE: Electri	ical			
EQUIPMENT NO.:	1623-XV-001B				
EQUIPMENT DESCR	RIPTION: 120V	motorized butterly valve			
SPECIFICATION NO					
DRAWING NO.:					
	DESCRIPTION	ON OF NON-CONFORM	ANCE, QUALITY SURVEILANCE O	R AUDIT	
Broken valve handle					
		PO	OT CAUSE		
Jamasad while ather	s manually drained tank		OT CAUSE		
	west.	CORRE	CTIVE ACTION	-	
Repair	11-	77,12-37,041,041	AND THE RESERVE OF THE PARTY OF		
	20	Te repair outs	fanding. Material Net on	site	
	70	ob Suspended			
	1100				
		ENGINEERING REVIE	W OF CORRECTIVE ACTION		
ENG	GINEERING REVIEWE	D AND APPROVED:	COMMENTS: (S	EE BELOW)	
nteral deficiency before	re turnover.				
NAME:			TITLE:	DATE:	
	COF	RECTIVE ACTION COM	IPLETION AND NCR CLOSE OUT		110 to
V 14 16		141.0	Sa Salar		(400)
	COLATE PERMIT		Construction manager	No	
JONSTRUCTION DE	SIGNATE - Print/Sign		TITLE		DATE
		1			
CONTRACTOR QC D	ESIGNATE - Print/Sign	i	TITLE		DATE
		Ĭ			::::::::::::::::::::::::::::::::::::::
LIENT DESIGNATE	- Print/Sign (If Applicab	(%)	The second secon		(Standard)
PLICITION DEGIGNATE	- i min orgin (ii Applicati	10)	TITLE		DATE

TITLE

DATE



Written Inspection Request

INSPECTION REQUEST REGISTRY

IR No.	Project Name	Location	Contractor	Date issued	Contract No.	CWP	Area	Disc.	Type	Description	Reference Dwg. No/ Rev. No.	I/R Date &Time Inspected
0001	CVR-041	Treated Effluent Pump Station	ADCO		3804 MEIP	CVR-041	Treated Effluent Pumping Station			Pre Commissioning checks	H353004-CX001-227-248-0001	mopected
0002												
0003												
.0004												
0005												
0006												
0007												
8000												
0009												
0010												
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0016												
0017												
0018												
0019												
0020												
0021												
0022								1				



RFI Registry

REQUEST FOR INFORMATION REGISTRY

RPI No.	Decement No.	10	FROM	Subject	DAYE	KEF Doc No.1	Requested Sequired	Engineering Responce	Prepared by	Engineer Approved By	Date
0001	RFI-013	HATCH	ADCD/NUNA	Level sensor lengths	2018-10-30		Colin Burd	Proceed as recommended		Gien Peace	11-Dec-2018
0002	RFI-015	HATCH	ADCO/NUNA	Power and Control clarification	2018-11-26		Colin Burd	Lots of comments on control panel requirements	Hermien Venter		2018-12-10
0003	RFI-022	HATCH	ADCO/NUNA	Space for electrical equipment	2019-03-06		Kyle Krahl/ Ryan Dicker	Will review and issue SI with path forward	Dean Moffett	Scott Devoung	25-Apr-2019
0004	RFI-026	HATCH	ADCO/NUNA	Effluent seacan heat	2019-04-07		Kyle Krahl/ Ryan	Project will review heat requirements and issue a SI with path forward	Dean Moffett	Scott Deyoung	25-Apr-2019
0005							Ditter	with path forward			20 mp 2025
0006											
0007											
0008										_	_
0009											
0010									-		
0011							_				
0012											
0013											
0014					-		-				
0015					+						





Construction Management Form Site Contracts Administration Request for Information

Project Name:	ject Name: Mary River Expansion Stage 3		3 Project Number:		H353004						
CWP No:			RFI No: 0	RFI No: 0013							
Contractor: Nun	a East Ltd.		Contract	No: CX	(001						
Initiated By: Col	in Burd		Cost imp	act?	Y⊠/ N						
Date of Submitta	il: 2018 – 10 - 30	0	Schedule	Schedule Impact? Y⊠ / N□							
Information Requirements In regards to the high level sensor East Low: 48 High: 12 High-High See attached m	e effluent pump ors. Nuna is rec " " " gh: 6"	commending the	e following se	sensor ensor le	lengths for the ngths:	low, high, and high-					
Reference Docui	ment No.		Revision	rision Title/Description							
			0								
RFI Classificatio Design	n: ⊠	Const	truction 🖂	i	Enhaicete	or/Vendor 🔲					
Routine Request			ication	5" 6"	rabricato	Other					
Project Respon						Other 🗆					
PROCEE	eo as s	100 HAVE		1MB-A	√ ∌€≬						
RFI Follow-up Re Contract Order Issue	의 시구에 보이 아이는데 이모리 시간 사람이 되었다.	No C (Import o	associated tracki	nor #11	Back-Charge Re	quired (Yes □/No □)					
As-Built Required	Yes □/	Manager Co.	diskalated tracks	ing my	Witness Color	Required (Yes 🗆/No 🗆)					
RFI Receipts a	nd Approvals										
Stakeholder		Name	s	ignatur	e	Date <yyyy-mm-dd></yyyy-mm-dd>					
Hatch Constructio Management	n										
Hatch Engineering	g Site □	G. PEAC	: B	\$6	26 Jesen	2018-12-11					





Construction Management Form Site Contracts Administration Request for Information

Hatch Project Management	HERMIEN VENTER	blbules	3018-12-11
Client (as required):		430000	- WOLD IN VI

Request for Information

Note: The response to this RFI is NOT an authorization to perform a change to the Contract. Work may proceed in accordance with the response only if such work involves NO change in cost or schedule. In the case where the response may involve change in cost or schedule, a Contractual instrument must be issued by Hatch and received by the Contractor before the response can be executed. Where no Contractual instrument is indicated, action must be taken in accordance with (reference appropriate Contract Sections that authorize execution of any change in schedule and cost).



HATCH

Baffinland Iron Mines LP Mary River Expansion Stage 3 H353004

Construction Management Form Site Contracts Administration Request for Information

Request for Information

Project Name:	Mary River E	xpansion Stage	3 Proje Numi			H353004					
CWP No:			RFIN	o: 0	015						
Contractor: Nuna	a East Ltd.		Contr	act	No: CX	(001					
Initiated By: Coli	n Burd		Cost	imp	act?	Y⊠/ N					
Date of Submitta	l: 2018 – 11 – :	26	Sche	Schedule Impact? Y⊠ / N□							
Nuna is requesting 1. Approval 2. Is there 1 the requi 3. The design	Is there 120 VAC available for the panel in addition to the 600V for the pumps? If so this would eliminate the requirement for a transformer.										
Reference Docum	nent No.				Title/D	escription		- 100			
			0					5191			
RFI Classification Design	102			F7							
	⊠ □		struction fication			Fabricato	or/Vendor				
Project Respon			178,000	<u>ا</u>			Other 🗌				
See below											
RFI Follow-up Re		1 1 									
Contract Order Issue As-Built Required	d Yes ☐ Yes ☐	2752A A37	associated tra	ackin	g #])	Back-Charge Re- Materials	quired (Yes	s □/No □) s □/No □)			
RFI Receipts an	d Approvals										
Stakeholder		Name		Si	gnature)	Date <yyy< td=""><th>Y-MM-DD></th></yyy<>	Y-MM-DD>			
Hatch Construction Management	1		100								
Hatch Engineering	Site 🗆			DN:		scot.deyoung@hatch.com ing@hatch.com 9:42:16 -05'00'					
Hatch Project Man	agement	HERMIEN !	ENTER		Nond	. C	2016/12	10			
Client (as required)		And the Property of the Party o	LIVIC		HI WWW	U	10161100	10			



Construction Management Form Site Contracts Administration Request for Information

Note: The response to this RFI is NOT an authorization to perform a change to the Contract. Work may proceed in accordance with the response only if such work involves NO change in cost or schedule, in the case where the response may involve change in cost or schedule, a Contractual instrument must be issued by Hatch and received by the Contractor before the response can be executed. Where no Contractual instrument is indicated, action must be taken in accordance with (reference appropriate Contract Sections that authorize execution of any change in schedule and cost).

Comments on the drawings.

General comments:

- note 2 should read Terminal Block
- note 4 should read wire-markers

A Parts List is not included (relays, starters, overload protection etc.)

No Circuit breakers and Isolators are shown - it should be possible to switch off power to each section/ module/valve/pump etc. of the system, or all of it.

No surge arrestors are shown.

How will the UPS be incorporated into the wiring - the valves must close on loss of power.

The instrument and electrical grounding detail is insufficient.

The contractor needs to consider the following clauses from the specification:

2.6.16.7 All PLC and networking equipment, controller cabinet equipment, remote I/O cabinet equipment, HMI, and instrumentation associated with emergency equipment shall be connected to UPS having a full load rating of 30 minutes and will be supplied by emergency power. UPS units shall be used as necessary to provide transition between mainline power and emergency power.

2.6.17.4 Panels shall be provided with interior lighting and duplex, grounded-type 120 VAC, 60 Hz receptacles. An automatic light with manual override shall be mounted at the top of the panels near the front to allow for adequate lighting during Installation and servicing of the equipment.

2.6.17.8 Power supply for control panel receptacles, heaters, lights, etc., shall be completely independent from instrument power sources in the panel.

2.6.17.5 The instrument ground bus in each cabinet shall be tied together using an insulated conductor. The instrument signal common from all devices in each cabinet shall be connected to the instrument around.

2.6.17.26 Power signals and control signals shall have separate enclosures.

2.6.17.27 Terminal strips and wire-ways in panels and cabinets shall be segregated by voltage level and function as follows:

120 VAC power, control, and discrete input wiring (shroud and warning label).

Instrument or control system communications.

4 - 20 mA analog signals.

Other than the above its ok.

We need to include in our response the following comment

"Approval does not relieve the contractor of their design obligations as set out in the contract".

The PLC is the correct unit.

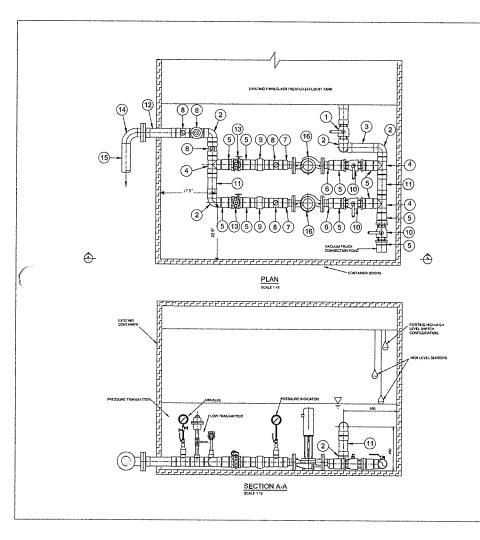




Construction Management Form Site Contracts Administration Request for Information

Project Name:	Mary River E	xpansion Stage	e 3 Project Number:	:	H353004					
CWP No: CVR-0	41 R1 – Effluer	nt Pump Station	n RFI No:	0022						
Contractor: Nun	a East Ltd.		Contract	t No: C)	(001					
Initiated By: Kyl	e Krahl / Ryan	Dicker	Cost imp	pact?	Y⊠/N	· □				
Date of Submitta	al: 2019 – 03 – (06	Schedul	Schedule Impact? Y⊠/N□						
Information Req Nuna East is requ	uesting informati									
panel and pump of in front of the elec	disconnect. The	layout of the pur	imps in the design	nk seaca yn do nof	an for proper ins t leave the requi	stallation of the electrical ired 1 meter of clearance				
seacan where the	The attached mechanical layout drawing "Pump Station Dimensions" indicates the space available in corner of the seacan where the electrical panels had been proposed to be installed. The dimensions of the panels are provided in the other attached document, "Pump Station Panels".									
Please provide an		unting location fo								
Reference Docum			Revision		escription					
H353004-CX00)1_0_V3	0	Pump	ed effluent pun station dimens station panels					
RFI Classification Design	n: ⊠	Cons	struction 🗵	cor	24000 W 2	or/Vendor				
Distriction of the state of the			ification		I abiloa.	Other				
Project Respon	nse: [attach suf	ficient detail as r								
path forward	d.	ated 10th of N	March and is	ssue s	site instruction	on with				
RFI Follow-up Re Contract Order Issue	: (1000000				
As-Built Required	ed Yes □/ Yes □/	1000 0000	t associated tracki	ng #])	Back-Charge Re Materials	equired (Yes 🗆/No 🗀)				
RFI Receipts ar	- Control of the cont					Trequired (100 Limb Li)				
Stakeholder	70.70	Name	S	ignature)	Date <yyyy-mm-dd></yyyy-mm-dd>				
Hatch Construction Management	n	-	de	an.moffett@	Dha Dignaty signed by dean muffettethalch.com DN con-Good moffettethalch.com Date 20190425 15 17 25 -0400	4				
Hatch Engineering] Site □			ot.deyoung@ n.com	pha 2019.04.25 13:47:57 -04'00'					

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3" 3" 3" 3" 3" 3" 2" 3" 2" 3" 2" 3" 2"		EASTHON COUNTER HOUSE ON TAKEN ITTER WITH BALL YALVE EUSTRIN NOZZE TO THE MINTH NEW 3" PYC BEI PYC OPE 25 HOUSENING HOUSE OF COUNTER HE SEE PYC OPE 15 HOUSE OF COUNTER HE SOCIETY ON 2 YOUR PYC HOUSE OF COUNTER HE SOCIETY ON 2 YOUR PYC CONCESTION DESCRIPT.
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3" 3"x2" 3"x2" 3"x1"		INC MAYE SOCKET ON 7 XON IZ PHO ECCENTRIC REDUCER. ON 7 XON IZ PMC CONCENTRIC REDUCER. ON 7 XON IZ PMC CONCENTRIC REDUCER. ON 7 XON IZ PMC REDUCKO TET PHOSE MMT SOCKETS ON ALL ENGS.
3'x2" 3'x2" 3'x1"		ON 3" X ON 2" PVC ECCENTRIC RÉDUCER. ON 3" X ON 1" PINC CONCENTRIC REDUCER. ON 3" X ON 1" PINC REDUCEN SEL-PINCE WITH SOCKETS ON ALL ENDS.
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3'21"		DN 3" X DN 3" PVC CONCENTRIC REDUCER DN 3" X DN 1" PVC REDUCING TEE-PIECE WITH SOCKETS ON ALL ENDS.
	5 2	
3"	2	
i		DN 3 FULL BORE PVC BALL VALVE
3"	3	PVC PIPE 200mm
*	,	PVC PIPE 300mm FLANGED ON ONE END.
3"	2	ON 3" ACTUATED BUTTERPLY VALVE
3"	,	HOPE SORTH NO ELBOW FLANGED ON ONE FIND
3		NEW 3" PIPELINE.
		PUMPS
- 1		DUTY AND STANDBY GOLDS 155VHCSS MULTISTAGE VERTICAL PUMP OR SINK AR APPROVED
3		.2

PIPE AND FITTING SPECIFICATIONS

t. ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH THE PROJECT PARTICULAR SPECIFICATIONS.

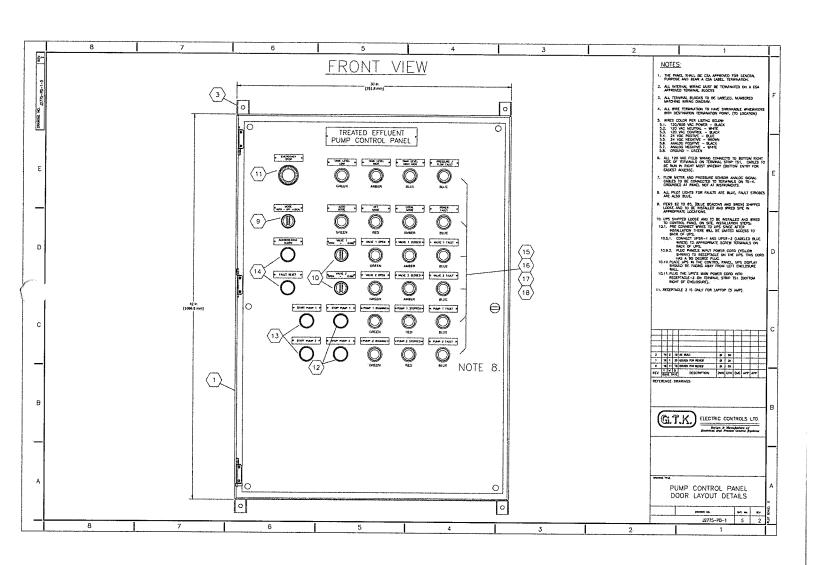
2. ALL PVC PPES TO BE CLASS 12

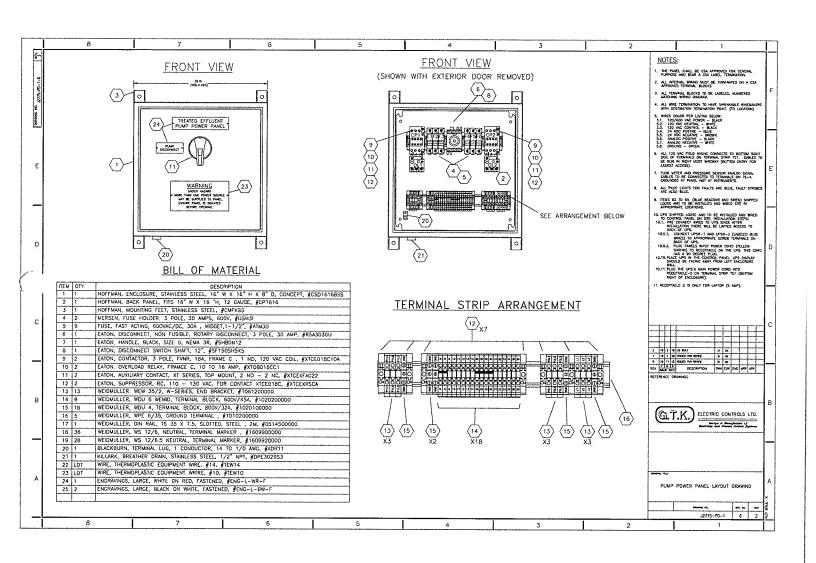
1. ALL YIC PREST OSE CLASS 12

NOTES:

CONTRACTOR OF RESPONSITE FOR FINAL CUT LENGTHS ON THE PPE AND

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Construction Management Form Site Contracts Administration Request for Information

Project Name:	Mary River Expansion Stage	3 Project Number:		H353004					
CWP No: Effluer	t Pump Station CVR-041	RFI No: 0	026						
Contractor: Nun	a East Ltd.	Contract	No: CX	(001					
Initiated By: Kyle	Krahl / Ryan Dicker	Cost imp	act?	Y⊠/N□					
Date of Submitta			Schedule Impact? Y⊠/N□						
1. Nuna is the treate as the experience of the second of t	requesting to use one of the two requesting to use one of the two ed effluent pumping station to pro- disting heater (Please confirm) to recommends installing a mining the piping and the seacan floor	spare heaters (ovide additional mum of 1 sheet to minimize the	purchas heat. So of rigid for risk of fr	sed for the under-camp heat scope) inside source of power could be the same circuit foam insulation on the floor of the seacan reezing					
Reference Docur	nent No	Revision	vision Title/Description						
Telefellet Booth	nent No.	Revision	Title/D	escription					
RFI Classification		- 23							
Design	Cons	truction 🛛		Fabricator/Vendor					
		ication 🛛		Other					
Project Respon	se: [attach sufficient detail as re	equired]							
The Project the path fo	t will review the heat rec	quirements a	and iss	sue a site instruction with					

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Construction Management Form Site Contracts Administration Site Instruction

Site Instruction

Contract No.:	H353004-CX001	Date:	2019-04-29	
Contractor:	Nuna East Ltd.	SI No.:	H353004-CX001-0042	
Contract Title:	Wrap Around MEIP	Reference Doc No.:	RFI 022, RFI 026	

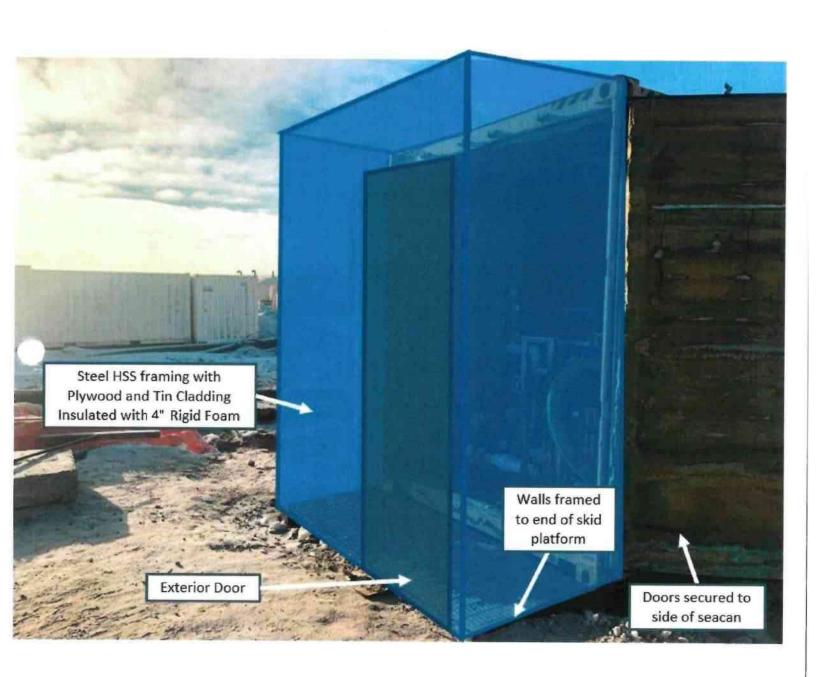
Site instruction requirements (check one):
(A) Proceed with the urgent work and submit a Contract Change Request (if applicable).
(B) Submit a quotation by for the work requested and await Hatch instruction to proceed.
(C) No cost or schedule impact. Proceed with the work.
(D) Proceed with the work with a maximum cost impact of \$; schedule impact of (days) and submit your quotation (if applicable)
Additional details:

Contractor is requested to frame out end of treated effluent tank for Sailiivik camp as shown in attached sketch to allow additional space for electrical panel and pump disconnect as requested in RFI 0022. Install panel adjacent to exterior door. Also proceed with insulation as recommended in RFI 0026, however please add an additional layer of rigid foam insulation on the walls and proceed with the insulation of heaters as proposed.

Notes:

- Any variation to the Contract arising from this instruction will be managed in accordance with the conditions of the Contract.
- The response to this Site Instruction must be returned when and as required above to Hatch via the Contractor portal.

Action Record	Name and Position	Signature	Date 2019/04/29
Initiated by:	Dean Moffett Site Superintendent	dean.moffett Digitally signed by dean moffetsblatch.com Dix (m-sidean moffetsalhatch.com) Dix (m-sidean moff	
Hatch/Client: Authorized by:	Scot DeYoung Package Coordinator	scot.deyoung ^{2019.04.29} 14:35:26 @hatch.com -04'00'	
<u>Hatch:</u> Verified by:	Michael Haaksma Area Manager	michael.haaks michael.haksma@hatch.com ma@hatch.com cn=michael.haaksma@hatch.com cn=michael.haaksma@hatch.com cn=michael.haaksma@hatch.com cn=michael.haaksma@hatch.com	2019/04/29





Baffinland Iron Mines LP



Baffinland Iron Mines LP Mary River Expansion Sta H353004	ge 3				te Contra	Management Form cts Administration est for Information
RFI Follow-up Requirer	nents:					
Contract Order Issued	Yes □/No □	([insert associated tra	cking #j)	Back-Charge Re	quired	(Yes □/No □)
As-Built Required	Yes □/No □			Materials	Required	(Yes □/No □)
RFI Receipts and App	provals					
Stakeholder	Name	e	Signature	е	Date <	YYYY-MM-DD>
Hatch Construction Management			dean.moffett@ tch.com	Dha Digitally signed by dean matters habitation in DN co-dean motivationate come DNs co-dean motivation and DNS co-dean motivatio		
Hatch Engineering Home Office ☐ Site ☐			scot.deyoung hatch.com	g@ 2019.04.25 13:48:51 -04'00'		
Hatch Project Manageme	∍nt		124:			
Client (as required):						

Request for Information

Note: The response to this RFI is NOT an authorization to perform a change to the Contract. Work may proceed in accordance with the response only if such work involves NO change in cost or schedule, in the case where the response may involve change in cost or schedule, a Contractual instrument must be issued by Hatch and received by the Contractor before the response can be executed. Where no Contractual instrument is indicated, action must be taken in accordance with (reference appropriate Contract Sections that authorize execution of any change in schedule and cost).



- CIS-70-999 Material Equipment Install List
- CTS-75-0156 Calibration of Instruments
- CIS-60-004 Pipework Installation
- CIS-60-010 Visual inspection of Flanges, Gaskets, and bolting
- CIS-75-019 Control Valves
- CIS-50-057 Bolt Torque Value Record
- CIS-60-007 Pressure Piping Report



CIS-70-999 Material Equipment Install List



(Sub)	Tag No: System:		Equipmen			oject No: Area:		3804 MEIP Mine Site
Desc	cription: CWP:		2004.02			Orawing: CLIENT:		H353004-CX001-227-248-0001_0_V3
NSTAL	L TYPE:	GLI IN	3804-02	e e e e e e e e e e e e e e e e e e e	DARKE,	CLIENT,	Electrical Equipment	BAFFINLAND IRON MINES, Baffin Island
ITEM	NAME	SIZE/ VOLT	TYPE/AMP	SUPPLY PROTECTION	SUPPLY ORIGIN	LOAD	DWG	COMMENTS
1	1623-PPC- 001	120V	Cutom NEMA 4 Enclosure	15A	1611-MDB-010	>12A	NA	GTK Custom Pump Controler
2	1623-PLC- 001	120V	Cutom NEMA 4 Enclosure	15A	1611-MDB-010	>12A	NA	GTK Custom Effluent Pump Control Panel
3	1623-PP- 001A	600V	NEMA 4X	30 A fuse	1623-PPC-001	9.3FLA	NA	10 HP 3P/600V Motor/Pump Assembly
4	1623-PP- 001B	600V	NEMA 4X	30 A fuse	1623-PPC-001	9.3FLA	NA	10 HP 3P/600V Motor/Pump Assembly
5	1623-FIT- 001	120V & 24V	NEMA 4X	1623-PPC- 001	1623-PPC-001		NA	4-20mv Flow Meter
6	1623-PIT- 001	120V & 24V	NEMA 4X	1623-PPC- 001	1623-PPC-001		NA	4-20mv Pressure Meter
3	1623-XV- 001A	120V & 24V	NEMA 4X	1623-PPC- 001	1623-PPC-001		NA	120V Motorized Butterfly Valve
8	1623-XV- 001B	120V & 24V	NEMA 4X	1623-PPC- 001	1623-PPC-001		NA	120V Motorized Butterfly Valve
9	1623-LSHH- 001	24V	Submersible	1623-PPC- 001	1623-PPC-001		NA	High High Limit Level Switch
10	1623-LSH- 001	24V	Submersible	1623-PPC- 001	1623-PPC-001		NA	High Limit Level Switch
11	1623-LSL- 001	24V	Submersible	1623-PPC- 001	1623-PPC-001		NA	Low Lmit Level Switch
12	1623-PLC- UPS-001	120V		1623-PPC- 001	1623-PPC-001		NA	GTK Supplied UPS in Custom Pump Controler
13								
14								
12								
13								
14								
15								
			Trades Perso	on	S	upervisor		Field Eng or QA/QC
rint N	ame:				Kyle Ko	ehl	nea	
ā:					1600			male
ate:	W				Nov 12	3 2-19	14-	Nov-19



A A S	Tag No:	Power and Instu	mentation/Contro	ol Cables	Pro	oject No:			3804 MEIP
(Sub)	System:	Effluent	Pumping Station			Area:			Mine Site
Desc	cription:					Drawing:			H353004-CX001-227-248-0001_0_V3
13444.08	CWP:		3804-023			CLIENT:		В	AFFINLAND IRON MINES, Baffin Island
NSTAL	L TYPE:	THE PROPERTY	3001023	TO STATE OF	SAN SERVICE		ical Cables	EVALUATION OF	NEW TOTAL PROPERTY OF THE PROP
	10 (0) (0) (0) (0) (0) (0) (0) (0) (0) (0				INSULATION	NO. OF		LENGTH	
ITEM	CABLE NAME/TAG	ORIGIN	DESTINATION	TYPE	RATING (KV)		SIZE (awg)	(M)	COMMENTS
16	1623-PPC-001-P1	1611-MDB-010	1623-PPC-001	Power	1kV TECK	3	10	180	Pump Power Feed to Pump Motor Controler
17	1623-PP-001A-P1	1623-PPC-001	1623-PP-001A	Power	1kV TECK	3	10	5	Power to pump 1
18	1623-PP-001B-P1	1623-PPC-001	1623-PP-001B	Power	1kV TECK	3	10	4	Power to pump 2
19	1623-PPC-001-C1	1623-PLC-001	1623-PPC-001	Control	1kV TECK	13	14	3	Pump status lights and PLC inputs to M1, Starter and holding contact
20	1623-PLC-001-P1	WTP 120/208V Panel	1623-PPC-001	Power	1kV TECK	3	10	180	Feed to PLC Control Panel
21	1623-PP-001A-P1	1623-PLC-001	1623-XV-001A	Power	1kV TECK	2	12	3	Valve 1 actuating Power
22	1623-PP-001B-P1	1623-PLC-001	1623-XV-001B	Power	1kV TECK	2	12	2	Valve 2 actuating Power
23	1623-PP-001A-C1	1623-PLC-001	1623-XV-001A	Control	300V TECK	2р	16	4	Valve 1 Control/Monitoring
24	1623-PP-001B-C1	1623-PLC-001	1623-XV-001B	Control	300V TECK	2р	16	3	Valve 2 Control/Monitoring
25	1623-FIT-001-C1	1623-PLC-001	1623-FIT-001	Control	300V TECK	1p	16	4	Flow transmitter control
26	1623-PIT-001-C1	1623-PLC-001	1623-PIT-001	Control	300V TECK	1p	16	3	Pressure transmitter control
27	1623-PIT-001-C2	1623-PLC-001	1623-PIT-001	DC Power	300V TECK	2	12	3	DC Power to Pressure transmitter
28	1623-JBX-001-C1	1623-PLC-001	Level Switch JBX (L,H,HH)	Power and Control	300V TECK	2р	16	5	Level indicator Sensors
29	1623-H/S-001-P1	1623-PLC-001	Horn/Strobe JBX	Power	1kV TECK	2	12	20	Hom Strobe notification Circuit
30									*****
30									
30									
30									
			Trades Person			Supervisor	DNEL 24- WW.	_	Field Eng or QA/QC
Print N	Name:				Kyp	Krahl		Derl	(/ dens/"
n:			111111111111111111111111111111111111111		10	P		in the	116.
Date:					Nov	13 2019			101 13/19



	Tag No: System:		CONTROL TER		Pi	roject No: Area:		3804 MEIP Mine Site
Des	cription:	PLEATER				Drawing:		H353004-CX001-227-248-0001_0_V3
	CWP:		3804-	023		CLIENT:		BAFFINLAND IRON MINES, Baffin Island
INSTAL	L TYPE:					Control Termina	tions	医胸膜 地质可能量可能等的现在分词
ITEM	CABLE NAME	CABLE SIZE/TYPE	ORIGIN	TERMINAL	DESTINATION	TERMINAL		COMMENTS
31	1623-PP-001A- P1	3c10	1623-PPC-001	P1L1, P1L2, P1L3	1623-PP-001A	Rd,Bk,Bl		Pump 1 Power
32	1623-PP-001B- P1	3c10	1623-PPC-001	P2L1, P2L2, P3L3	1623-PP-001B	Rd,Bk,Bl		Pump 2 Power
33	1623-PPC-001-	14c14	Pump Power Panel	31/32,33/34,35/36, 30	PLC Control pane	TS1: 31/32,33/34,35/36, F17		Indicator lights, PLC Input
34	C1	14014	Pump Power Panel	9/10,12/13,11/N,14	PLC Control pane	TS1: 9/10,11/12,13/14,N		Starters and holding contacts
35	1623-PP-001A- P1	2c12	1623-PLC-001	TS1: F15/N	1623-XV-001A	L1/L2		Power
36	1623-PP-001B- P1	2c12	1623-PLC-001	TS1: F16/N	1623-XV-001B	L1/L2		Power
37	1623-PP-001A- C1	2p16	1623-PLC-001	TS1: 17,18, F18/37, 38, 39	1623-XV-001A	35, 36, 32 jumper N, 20/21, 25, 2		Open, closed, fault PLC inputs
38	1623-PP-001B- C1	2p16	1623-PLC-001	TS1: 19,20, F19/40, 41, 42	1623-XV-001B	35, 36, 32 jumper N, 20/21, 25, 2		Open, closed, fault PLC inputs
39	1623-FIT-001- C1	1p16	1623-PLC-001	TS4: FD4, IN0+, SH	1623-FIT-001	" +, - , SH "		Flow transmitter control
40	1623-PIT-001- C1	1p16	1623-PLC-001	TS44: FD5,IN1+,SH	1623-PIT-001	" +, - , SH "		Pressure transmitter control
41	1623-PIT-001- C2	1p16	1623-PLC-001	TS4: FD2, DC -	1623-PIT-001	L+, L-		DC Power to transmitter
42	1623-JBX-001-C1	2p16	1623-PLC-001	24, 25, 26, 27, 28	Level Switch JBX (L,H,HH)	L,H,HH,Com		Level indicator Sensors
43	1623-H/S-001-P1	2c12	1623-PLC-001	22, N	Horn/Strobe JBX	"+,-"		Horn Strobe Power
44								
42								
43								
44								
45								
		28 SHEETS	Trades Pe	erson		Supervisor		Field Eng or QA/QC
'nt Na	ime:			-1 01 (02	Kule	krahl		Decele College
Ja:					Ru	0		The state of the s
ate:					Nou	15 2019		Nu 13/18



CTS-70-0156 Calibration of Instruments

CERTIFICATE OF CALIBRATION



Customer

ADC100 ADCO POWER LTD. Certificate No.

ED 58957

EDMONTON TEE 6G6

Callbration Date

2018-10-26

Cust. PO Order date

3804-0204 2018-10-24 Order No

883205

Type:

Line No

233.54.100

Accuracy

Range.

0 ... 300 psi

Output signal

1.000%

Serial No.

Tag No.

883205-1-2

Reference Instrument

0 ... 34 bar

03660633 2018-06

SS 106

Results

Temperature

20 °C

Reading DUT psi	Readi WS psi	nġ	Mean- value	Deviation psi	Hysteresis %	Deviation %
	M 1	M 2		·		
0.00	0.000	0.000	0.000	0.000	0.000	0,000
50.00	50.330	49.690	50.010	-0.010		-0.003
100.00	99.860	99.330	99.595	0.405	0.177	0.135
150.00	150.380	149.400	149,890	0.110		0.037
200.00	198.350	198.480	198:415	1.585	0.043	0,528
250.00	248:140	248.470	248.305	1.695	0.110	0.565
300:00	297.250	297.250	297,250	2.750	0.000	0.917

Declaration of conformity:

The object is within the specifications according to the stated standards.

Calibration is carried out according to the following norms:

- ASME B 40.1 (latest revision)

- Calibration of WIKA test instruments is carried out on an annual basis and test instruments are traceable to NIST.

- Validity of certification of WIKA's test instruments is one year from date of issuance.

Calibrated by

Agata Haertel

Approved by

John Morgan

Agata Haertel

HEAD OFFICE WIKA INSTRUMENTS LTD. 5103 Parsons Road. 5103 Parsons Road. TEN 102 Tetz. (780) 453-7035

WIKAMISTRUMENTS LTD 2679 Bastol Circle; Unit #2 Cakville, ON LGH 628 Tej:: (905) 337-1811

WIKAINSTRÜMENTS LTD 4932 62 Street S.E. Caigary, AB Canada T2B 3R2. Tel: (403) 237-5950

WIKA INSTRUMENTS LTD - #294, 8604 - 100 Avenus. Grando Preirie, AB T6V.0TB - T6T: (780) 513-7480

WIKAINSTRUMENTS LTD. 901 First Avenue North Saskatoon, SK 57K-174 Tel. (306) 664-1105

WIKAINSTRUMENTS LTD. 4627 Frances Street Burnaby, BC VSC 2R9 Tel: (604) 289-3855

CERTIFICATE OF CALIBRATION



Customer

ADC100

ADCO POWER LTD.

Certificate No.

ED 58956

EDMONTON T6E 6G6

Calibration Date

2018-10-26

Cust. PO Order date

3804-0204 2018-10-24

Order No. Line No

883205

Туре

233.54.100

1.000%

Range

0 ... 300 psi

Output signal

Serial No.

Tag No.

Accuracy

883205-1-1

Reference Instrument

0 ... 34 bar

03560633 2018-06

SS 106

Results

Temperature:

20 °C

Reading DUT psi	Readi WS psi	'	Mean- value <i>psi</i>	Deviation psi	Hysteresis %	Deviation %
	M 1	M 2			التورد بويد سرده دسويه حرده	
0.00	0.000	0.000	0.000	0.000	0.000	0.000
50,00	50.610	49,460	50.035	-0.035	0.383	-0.012
100.00	100,010	98.460	99.235	0.765	0.517	0,255
150.00	149.940	147.840	148,890	1.110	0.700	0.370
200.00	198.840	198.940	198.890	1,110	0.033	0.370
250.00	248.600	247.780	248.190	1.810	0.273	0.603
300.00	299.610	299,610	299,610	0.390	0.000	0.130

Declaration of conformity:

The object is within the specifications according to the stated standards.

Calibration is carried out according to the following norms:

- ASME B 40.1 (latest revision)

- Calibration of WIKA test Instruments is carried out on an annual basis and test instruments are traceable to NIST.

- Validity of certification of WIKA's test instruments is one year from date of issuance.

Approved by

John Morgan

Callbrated by

Agata Haertel

Agata Haertel

HEAD OFFICE WIKA HISTRUMENTS LTD. \$103 Persons Road Ethnoslon, AB Cenada TBN 1CB Tel. (780) 483-7035

WIKA INSTRUMENTS LTD. 2579 Bostol Cacle; Unit #1 Oakville, ON L6H 6ZB Tel: (905) 337-1811

Wikalnstruments LTO. 4932 52 Street S.E. Calgary, AB Canada T2B 3R2 Tel: (403) 237-5860

Wika INSTRUMENTS LTD. #204, 9904 - 100 Avenue; Granda Prakte, AB. T&V 018 Tel.: (780) 513-7460

V//KAINSTRUMENTS LTD. 901 First Avenue North Saskatoon, SK 57K,1Y4: Tel.; (308) 604-1105

WINA INSTRUMENTS LTD. 4627 Frances Street. Burnaby, BC VSC 2R9 Tel: (604) 299-3655



CIS-60-004 Pipework Installation

Construction Inspection Sheet CIS-60-004 Pipework Installation





39	Tag No:	1623-EFL-101-XXX-100	Project No:			3804 ME	IP
(Sub))System:	1623-Effluent Pumping Station	Area:			Mine Sit	e
Des	cription:	CS40 CPVC PUMP SUCTION HEADER	Drawing:	H353	004-CX0	01-227-2	48-0001_0_V3
	CWP:	3804-CVR-023	CLIENT:				IES, Baffin Island
Item	Description			Yes	No	N/A	Comments and Data
1	Line as per P &	ID (size, spec, from /to)				1.47.	Comments and Bata
2		for pipe and fittings check against spec (mate	rial SCH fittings valves tests)	1/			
3	Welding of pipe	flanges (procedure, qualifications, preparation	n/size)	1	-	100	Dur 11
4		and satisfactory	110120)	1	\vdash		PUC Glac.
5	Weld records o		1000	V			Sevie Trit
6		ight and plumb, pipe spacing correct			-		
7	Line slopes as			1/		-	
8	High point vents			V	_		
9		and location approved by operations		V		-	
	Reducer type/lo		1-0				
		(spec, blinds as per dwg)		V			
	In-Line instrume						
		the control of the co		V			
	Grounding in pla					V	
	Valve hand whe		1000	V			
	No walkway res			V			
16		pport of flexible lines satisfactory for operation				V	
		ols/blinds for testing installed as required				/	
		correct type, length, dia, installation, lubrication	on, torque)	V			
		material and thickness (no grease)		/			2-11-11-11-2-1-2-1-2-1-1-1-1-1-1-1-1-1-
	Flushing & clea					V	
21	Strainers & bline	ds/temporary spools removed				V	
22	Painting as spe	cified				/	
23	Labelling and flo	ow direction as specified			V		- 3/2/ 22/
24	Valve labelled 8	operation check			/		
25	Pipe supports lo	ocated as specified		~			
26	Hangers, mount	ting and support correct				V	
27	Flange bolts tig	ht	30	1/			
28	All equipment (v	valves, blinds instruments etc) installed as spec	cified		_		
		I terminations complete		/		-	
		etion completed for gas piping				/	
Comme	-	ow & Values To Be	labelled.				100114
		Trades Person	∧ Supervisor	Т		Field F	
Print Na	amo:		//		1	Field E	ing or QA/QC
Market State	anne.	Jered Polachek	Andrew Hamilt		20	an r	1 offett
<u>,n:</u>		of ADCO	of ADC)	D.	Make	
Date:		, 2019	Aug / 5 , 2019		12.	Sel	19

Construction Inspection Sheet CIS-60-004 Pipework Installation



40	Tag No:	1623-EFL-102-XXX-100	Project No:			3804 ME	IP .
(Sub))System:	1623-Effluent Pumping Station	Area:			Mine Sit	
Des	cription:	CS40 CPVC PUMP DISCHARGE HEADER	Drawing:	H353	004-CX0	01-227-2	48-0001_0_V3
	CWP:	3804-CVR-023	CLIENT:	BAFFINI	AND IR	ON MIN	IES, Baffin Island
Item	Description			Yes	No	N/A	Comments and Data
1		R ID (size, spec, from /to)	- 10 - 10 - 10 - 10 - 10 - 10 - 10 - 10	V			
2	Material correc	t for pipe and fittings check against spec (mater	rial, SCH, fittings, valves, tests)	V			
3	Welding of pipe	e flanges (procedure, qualifications, preparation	/size)	V			PUC GIVE
4	NDT complete	and satisfactory		V			Ceriotist
5	Weld records of	complete				レ	
6	Installation stra	eight and plumb, pipe spacing correct		V			
7	Line slopes as			V	ii k		
8	High point vent			V			
9		d and location approved by operations				V	
10	Reducer type/le	ocation correct		V			
11	Blinds installed	. (spec, blinds as per dwg)				V	
12	In-Line instrum	ents installed		V			
13	Grounding in p					~	
14	Valve hand who	eel accessibility		V			
15	No walkway res		77	V			
16	Location and s	upport of flexible lines satisfactory for operation				V	
17	Temporary spo	ols/blinds for testing installed as required				V	
18		s correct type, length, dia, installation, lubricatio	on, torque)	/			
19	Correct gasket	material and thickness (no grease)		V			
20	Flushing & clea		3.00			V	
21	Strainers & blin	ds/temporary spools removed				V	
-	Painting as spe	ecified				V	
23		ow direction as specified			V		
24	The Company of the Co	& operation check			V		
-		ocated as specified		V			30000
26		iting and support correct		,			
27	Flange bolts tig	THE STATE OF THE S					
-		valves, blinds instruments etc) installed as spec	cified				
		d terminations complete		V			
30	Notice of comp	letion completed for gas piping					
Comme	- 1 -	Clow & Vilus To Burp Value Dischuge tank.	Be Labelled, e to be Dr	e not	(P	seek	. mbo
000780 SA 1700		Trades Person	Supervisor				Eng or QA/QC
Print Na	ame:	J e red Polachek	Andrew Hamilt	on	De	an r	1offe++
<u>,n:</u>		of ADCO	of ADCC)	D.	200	lt-
Date:		15 Sug , 2019	Aug /5 , 2019	ı	12	Sep	19



CIS-60-010 Visual Inspection of Flanges, Gaskets, and Bolting

Construction Inspection Sheet CIS-60-010 Visual Inspection of Flanges, Gaskets, and Bolting



39	Tag No:	Flanges on	Spool 1	623-EFL-101-XXX-100		Project No:	STON		3804 ME	IP .
(Sub)System:	1623	-Effluent	Pumping Station		Area:			Mine Sit	e
Des	cription: 3 I	4.70		CTION HEADER with 1 BER Gaskets	IX 1"	Drawing:	H3530	004-CX0	01-227-2	48-0001_0_V3
	CWP:		3804-	CVR-023		CLIENT:	BAFFINL	AND IR	ON MIN	IES, Baffin Island
Item	Description						Yes	No	N/A	Comments and Data
1	Check that flang	ge faces hav	e been th	noroughly cleaned, ren	noving all	rust and burrs	~			
2	of the specificat	ion		e for any damage, in a	accordanc	e with the requirements	V			37
3	Check the Flang				758	76-	V			
4	Check that bolts	are of the c	orrect siz	ze, type, length, cleanl	iness and	absence of burrs	V			
5						cleaned by power brush		00-34	/	
6	Ensure that the	gasket is in	accordan	ice with the applicable	material of	class	V		Same and the state of the	
7	Check the cond	ition and rati	ng of gas	skets			V			
8	Ensure that spir	al wound, m	etal gask	et or sheet gaskets ar	e not re-u	sed after use				
9	Check that the d	correct threa	d lubricar	nt is applied to every f	riction surf	ace of the bolt assembly				
10			ant used	is suitable for the oper	rating tem	perature of the system			V	
11	Torque sequence Torque values v			***			V			
13	Identification of		nection	1.000			V			
14		ng surface of		ge faces for surface de	efects on r	non-metallic or metallic				
15		are of the c	orrect siz	e, length, cleanliness	and abser	nce of burrs (Metallic or	V			
16			accordan	ce with the applicable	material o	class (Metallic or plastic	V			
17		hread lubrica	ant used	is suitable for the oper	rating temp	perature of the system	*			
18	Check that gask			red		4.05				·
19	Check that all fla						V			
20			1000		es taken a	round the circumference	V			
21	UIUER			been cleaned and lub			V			
21	lubricant									I ANGELO CONTRACTOR OF THE PROPERTY OF THE PRO
22	thread (3mm) be	yond the nu	ıt			that stud ends extend 1	V			- 1000
23	the applicable pr	oject specifi	cations			led in accordance with	V			
24	correct sequence	е				orque value and ensure	V			
25	correct sequence	е				orque value and ensure	V			
26	Check and ensu ensure correct se		lts have I	been torqued to 100%	of the fina	al torque value and				
Comme	nts:	1100				. 18				
			Trades	Person	1	Supervisor		V20-00-1	Field E	ing or QA/QC
Print N	ame:		>	Jered Polachek		Andrew Hamilt	on	De	n M	offett
gn:		\mathcal{G}		of ADCO	///	of ADCC		D	my	The state of the s
Date:		15	Aug	, 2019	10	Aug /5 , 2019		12	SEP	19

Construction Inspection Sheet CIS-60-010 Visual Inspection of Flanges, Gaskets, and Bolting





Care Comments 1623-Effluent Pumping Station Area: Mine Site	40	Tag No:	langes on Spool	1623-EFL-102-XXX-10	00	Project No:			3804 ME	ID.
Description: 11 Flanges on PUMP DISCHARGE HEADER with 2X 2" CWP: 3804-CVR-023 CLIENT: BAFFINLAND IRON MINES, Baffin Island Check that flange faces have been thoroughly cleaned, removing all rust and burrs Check sealing surfaces on flange face for any damage, in accordance with the requirements of the specification Check the Flange bye and rating Check that bots are of the correct size, type, length, cleanliness and absence of burrs Check that bots are of the correct size, type, length, cleanliness and absence of burrs Check that dust are of the correct size, type, length, cleanliness and absence of burrs Check that contains are of the correct size, type, length, cleanliness and absence of burrs Check that the grask test is in accordance with the applicable material class Check that the grask test is a coordance with the applicable material class Check that the correct thread lubricant is applied to every friction surface of the bott assembly Check that the theread lubricant used is suitable for the operating temperature of the system Check that the sealing surface of the flange faces for surface defects on non-metallic plastic lined flanges Check that the sealing surface of the flange faces for surface defects on non-metallic or plastic lined flanges Check that the size and the surface size, length, cleanliness and absence of burrs (Metallic or plastic lined flanges) Check that the size and the surface size, length, cleanliness and absence of burrs (Metallic or plastic lined flanges) Check that the size and the surface size, length, cleanliness and absence of burrs (Metallic or plastic lined flanges) Check that the size service is a coordance with the applicable material class (Metallic or plastic lined flanges) Check that all study botts are nurged up squarely Check that all study botts are nurged up squarely Check that all study botts and nuts are hand tight ensuring that stud ends extend 1 Linch study of the size o	(Sub)System:	1623-Effluen	t Pumping Station		Area:				
Item Description Description Check that finage faces have been thoroughly cleaned, removing all rust and burs Yes No N/A Comments and Da Check that finage faces on flange face for any damage, in accordance with the requirements of the specification Check the Flange type and rating Check that botts are of the correct size, type, length, cleanliness and absence of burs Check that botts are of the correct size, type, length, cleanliness and absence of burs Check that condition and rating of gaskets Check that condition and rating of gaskets Check that condition and rating of gaskets Check that the correct thread lubricant tase spiled to every fiction surface of the bott assembly Check that the thread lubricant used is suitable for the operating temperature of the system Check that the thread lubricant used is suitable for the operating temperature of the system Check that bear over thread lubricant is applied to every fiction surface of the bott assembly Check that bear over thread lubricant tased is suitable for the operating temperature of the system Check that bear over thread lubricant used is suitable for the operating temperature of the system Check that bear of the correct size, length, cleanliness and absence of burns (Metallic or plastic lined flanges) Check that bear of the correct size, length, cleanliness and absence of burns (Metallic or plastic lined flanges) Check that all flanged joints are snugged up squarely Check that all flanged joints are snugged up squarely Check that all flanged joints are snugged up squarely Check that all flanged joints are snugged up squarely Check that all flanged joints are snugged up squarely Check that all flanged joints are snugged up squarely Check that all flanges and boils and nuts are hand tight ensuring that stud ends extend 1 Check that all flanges and boils have been trepared and pre-assembled	Des				th 2X 2"	Drawing:	H353			
Description Obeck that flange faces have been thoroughly cleaned, removing all rust and burs Check sealing surfaces on flange face for any damage, in accordance with the requirements of the specification Obeck the Flange type and rating Check that able is are of the correct size, type, length, cleanliness and absence of burrs Ensure that all nuts and washers (where contact is made) have been cleaned by power brush Check that condition and rating of gaskets Check that condition and rating of gaskets Ensure that spiral wound, metal gasket or sheet gaskets are not re-used after use Check that the thread lubricant used is suitable for the operating temperature of the system Torque sequence correct Torque values verified Check that selling surface of the flange faces for surface defects on non-metallic or metallic plastic limed flanges Check that be thread lubricant used is suitable for the operating temperature of the system Check that boths are of the correct size, length, cleanliness and absence of burrs (Metallic or plastic limed flanges) Check that boths are of the correct size, length, cleanliness and absence of burrs (Metallic or plastic limed flanges) Check that the thread lubricant used is suitable for the operating temperature of the system Check that the thread flanges is a coordance with the applicable material class (Metallic or plastic limed flanges) Check that all flanged joints are snugged up squarely Check that all flanged joints are snugged up squarely Check that all flanged joints are snugged up squarely Check that all stude both sand unts are hand tight ensuring that stud ends extend 1 withread (3mm) beyond the nut thread (3mm) beyond the nut Check that all stude both sand nuts are hand tight ensuring that stud ends extend 1 withread (3mm) beyond the nut Check that all stude both sand both shave been torqued to 1/3 of the final torque value and ensure correct sequence Check and ensure that all boths have been torqued to 100% of the final torque value and ensure correct seq		CWP:	3804	-CVR-023		CLIENT:	BAFFINI	LAND IR	ON MIN	IES. Baffin Island
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Check and ensure that all bolts have been torqued to 1/3 of the final torque value and ensure Check and ensure that all bolts have been torqued to 2/3 of the final torque value and ensure Check and ensure that all bolts have been torqued to 2/3 of the final torque value and ensure Check and ensure that all bolts have been torqued to 100% of the final torque value and ensure correct sequence Trades Person Supervisor Field Eng or QA/QC Print Name: Jered Polachek Andrew Hamilton		uneau (Smin) beyor	na the nut				V			
Check and ensure that all bolts have been torqued to 2/3 of the final torque value and ensure Check and ensure that all bolts have been torqued to 100% of the final torque value and ensure correct sequence Trades Person Supervisor Field Eng or QA/QC Print Name: Jered Polachek Andrew Hamilton		trie applicable proje	ct specifications				V			
Correct sequence Check and ensure that all bolts have been torqued to 100% of the final torque value and ensure correct sequence Comments: Trades Person Supervisor Field Eng or QA/QC Print Name: Jered Polachek Andrew Hamilton Andrew Hamilton		correct sequence					V			
Check and ensure that all bolts have been torqued to 100% of the final torque value and ensure correct sequence Trades Person Supervisor Field Eng or QA/QC Print Name: Jered Polachek Andrew Hamilton Supervisor Andrew Hamilton	25	Check and ensure to correct sequence	hat all bolts have I	been torqued to 2/3 of	f the final to	orque value and ensure				
Trades Person Supervisor Field Eng or QA/QC Print Name: Jered Polachek Andrew Hamilton Andrew Hamilton	26	Check and ensure t	hat all bolts have t	been torqued to 100%	of the fina	I torque value and		\dashv		
Print Name: Jered Polachek Andrew Hamilton Dean Moffett										
Print Name: Jered Polachek Andrew Hamilton Dean Moffett			Trades	Person	٨	Supervisor			Field Fr	og or OA/OC
(n:	rint Na	me:		Jered Polachek			n	Non		0.0
OTADEO / /// OTADEO	ړn:		gh	of ADCO	1m		11	10 1	41	-
Date: 15, Aug 15, 2019 Aug 15, 2019 12 Sec 19	Date:	//	15, 250T	, 2019	/(N. A.	_	12.	See	(9



CIS-75-019 Control Valves



	1 Tag No:	1623-100-VGA-01	Project No:	ATT SEALS		3804 MEI	Р
(Sub)System:	1623-Effluent Pumping Station	Area:			Mine Site	
De	scription:	600 WOG BRASS BALL VALVE EFFLUENT TANK MAIN ISOLATION VALVE	Drawing:	H3530	004-CX0	01-227-2	48-0001_0_V3
	CWP:	3804-CVR-023	CLIENT:	BAFFINL	AND IR	ON MIN	ES, Baffin Island
Item	Description	on		Yes	No	N/A	Comments and Data
1	General D	Data Control of the C			- 110	1.7.4	Comments and Data
2	Drawing N	No:			-	100	
3	Specifical	tion No:			-10		
4	Naneplate	e Data					
5	Operating	Pressure: - Ve					
6	From:	Efflut Tak					
7	To:	PP-001A & PP-001B				-	
8	Inspection						
9	Re-Check	Lubrication				г т	-
10	Visual che	eck on bolt and fastener tightness					110
11		igs installed					NPT
12	Check cor	rrect handle type	7000	1./		V	
13		ch valve operation (fully stroked)					
14		locking mechanism				-	
15	Line N		ool 1623-EFL-101-XX	X-100			
mme	ents:		-3	J. 100			

	Trades Person	/	Supervisor	Field Eng or QA/QC
`rint Name:	Jered Polachek		Andrew Hamilton	
rint Name: Jign:	Jered Polachek		Andrew Hamilton of ADCO	N 44 CC 1.



2	2 Tag No:	1623-100-VGA-02	Project No:		STOP REST	3804 ME	IP.
(Sub)System:	1623-Effluent Pumping Station	Area:			Mine Site	
		2020 Emdent's disping Station	Aica.	Wille Site			
Des	scription:	CL150 PVC BALL VALVE PUMP 1 ISOLATION VALVE	Drawing:	H3530	004-CX0	01-227-2	48-0001_0_V3
O.	CWP:			e de la		ALC: UNITED STATE	ALTERNATION OF THE STATE OF
		3804-CVR-023	CLIENT:	BAFFINL	AND IR	ON MIN	IES, Baffin Island
Item	Descriptio			Yes	No	N/A	Comments and Data
1	General D						To the difference of the potes
2	Drawing N						
3	Specificati	on No:	************				
4	Naneplate		W				
5	Operating	Pressure: - UE					
6	From:	Ellow Tak					
7	To:	Porp 1					10 10 10 10 10 10 10 10 10 10 10 10 10 1
8	Inspection						
9	Re-Check	Lubrication	657			./	
10	Visual che	ck on bolt and fastener tightness				1	
11	Check plug	gs installed					
12	Check corr	rect handle type		-			
13	Check eac	h valve operation (fully stroked)			o= 514		
14	Check for I	ocking mechanism					
15	Line N	o Spo	ool 1623-EFL-101-XX	(X-100			
mme	nts:						

	Trades Person	Supervisor	Field Eng or QA/QC
rint Name:	Jered Polachek	Andrew Hamilton	Dean Moffett
∍ign:	of ADCO	of ADCO	10 make
Date:	15 Aug , 2019	Aug , 2019	12 6 19



3	3 Tag No:	1623-100-VGA-03	Project No:			3804 ME	IP
(Sub)System:	1623-Effluent Pumping Station	Area:			Mine Site	e
Des	scription:		Drawing:	H3530	004-CX0	01-227-2	248-0001_0_V3
		CL150 PVC BALL VALVE PUMP 2 ISOLATION VALVE					
	CWP:	3804-CVR-023	CLIENT:	BAFFINL	AND IR	ON MIN	IES, Baffin Island
Item	Description	on		Yes	No	N/A	Comments and Data
1	General D	Data					
2	Drawing I	No:					7/0 6
3	Specificat	tion No:		1/10.02			
4	Naneplate						
5	Operating	Pressure: - VE					
6	From:	Efflunt Tank					
7	To:	Pmp2					
8	Inspection						
9		Lubrication	William Co.			V	
10		eck on bolt and fastener tightness				V	
11		igs installed				V	
12		rrect handle type	- AUMON	V			
13		ch valve operation (fully stroked)					7.000
14	Check for	locking mechanism				1/	
15	Line I	No Sp	ool 1623-EFL-101-X	(X-100			
mme	ents:			3111			

	Trades Person		/ Supe	rvisor	Field Eng or QA/QC
rint Name:	Jered Pol	achek /	And	drew Hamilton	Dean Moffet +
ign:	C/Z of AD	co //	hm	of ADCO	Q. maho
Date:	15 Aug , 2019	///	Aug	, 2019	12-Sep-19



4	Tag No:	1623-25-VGA-04	Project No:	3804 MEIP				
(Sub)System:	1623-Effluent Pumping Station	Area:			Mine Site	e	
Des	scription:	otion: CL 800 CS BALL VALVE PUMP 1 PRESSURE GAUGE Drawing: H ISOLATION VALVE		H3530	04-CX0	01-227-2	48-0001_0_V3	
	CWP: 3804-CVR-023 C			BAFFINLAND IRON MINES, Baffin Island			ES, Baffin Island	
Item	Description	n		Yes	No	N/A	Comments and Data	
1	General D							
2	Drawing N	lo:						
3	Specificat	ion No:						
4	4 Naneplate Data							
5	Operating	Pressure: 110 PSI						
6	From:	Pupl					-	
7	To:	prop 1 Pressure Gar						
8	Inspection							
9	Re-Check	Lubrication	W.0-			1/		
10	Visual che	ck on bolt and fastener tightness					NPT	
11	Check plu	gs installed				1/		
12	Check cor	rect handle type		V		1		
13	Check eac	ch valve operation (fully stroked)			_	1		
14	Check for	locking mechanism	- 1000g	1				
15	Line N	lo Sp	ool 1623-EFL-102-X	XX-100				
mme	ents:							

	Trades Person	Supervisor	Field Eng or QA/QC
`rint Name:	Jered Polachek	Andrew Hamilton	Dean Moffett
oign:	of ADCO	/ of ADCO	D. Mark
Date:	15 Aug , 2019 /	Aug /5 , 2019	12-Sep-19



5	Tag No:	g No: 1623-25-VGA-05 Project No: 3804 MEIP					P
(Sub)System:	1623-Effluent Pumping Station	Area:			Mine Site	
Des	Description: CL 800 CS BALL VALVE PUMP 2 PRESSURE GAUGE ISOLATION VALVE		Drawing:	H35300	04-CX0	01-227-2	48-0001_0_V3
	CWP:	3804-CVR-023	CLIENT:	BAFFINLA	ND IR	ON MIN	ES, Baffin Island
Item	Descriptio	n		Yes	No	N/A	Comments and Data
1	General D	ata	1,500				
2	Drawing N						
3	Specificati	on No:					
4	Naneplate						
5	Operating	Pressure: 110 PSI					
6	From:	Pmp 2					
_ 7	To:	fing I fressur 6.	·us				
8	Inspection		0				
9	Re-Check	Lubrication				./	
10	Visual che	ck on bolt and fastener tightness		1/			NPT
11	Check plug	gs installed			H20-	1/	70 1
12	Check con	rect handle type	5/12	1/			
13	Check eac	h valve operation (fully stroked)		1/			
14		locking mechanism					
15	Line N		ool 1623-EFL-102-XX	(X-100			
mme	nts:						

	Trades Person		Supervisor	Field Eng or QA/QC
rint Name:	Jered Polachek		// Andrew Hamilton	Dean Moffett
ગgn:	C/C of ADCO		of ADCO	D. much
Date:	15 Aug , 2019	11	Aug 15, 2019	12-500-19



0	5 Tag No:	1623-100-VGA-06	Project No:	3804 MEIP Mine Site				
(Sub)System:	1623-Effluent Pumping Station	Area:					
Des	Description: CL 150 MOV BUTTERFLY VALVE PUMP 1 MOV ISOLATION VALVE			: H353004-CX001-227-248-0001_0_V3				
	CWP:	3804-CVR-023	CLIENT:	BAFFINL	AND IR	ON MIN	IES, Baffin Island	
Item	Description			Yes	No	N/A	Comments and Data	
1	General Data	20		100	110	1,7,7	comments and bate	
2	Drawing No:							
3	Specification No	(
			7 CI	150				
3	Specification No	KeySTONE Series 367	2 CL	150				
3	Specification No Naneplate Data	KeyStone Sevies 367	el l	150				
3 4 5	Specification No Naneplate Data Operating Press	wre: 110 PSI	2 CL	150				
3 4 5 6	Specification No Naneplate Data Operating Press From: To: Inspection	WexSTONE Series 367 wro: 110 PSI Dischage Line	2 CL	150				
3 4 5 6 7	Specification No Naneplate Data Operating Press From: To: Inspection Re-Check Lubric	Wexstone series 367 ure: 110 PSI Pomp 1 Dischage Line cation	2 CL	150				
3 4 5 6 7 8	Specification No Naneplate Data Operating Press From: To: Inspection Re-Check Lubric Visual check on	Wexstone Series 367 ure: 110 PSI Pump 1 Drs. charge Line cation bolt and fastener tightness	2 CL	150		~		
3 4 5 6 7 8	Specification No Naneplate Data Operating Press From: To: Inspection Re-Check Lubric	Wexstone Series 367 ure: 110 PSI Pump 1 Drs. charge Line cation bolt and fastener tightness	2 CL	150		/		
3 4 5 6 7 8 9	Specification No Naneplate Data Operating Press From: To: Inspection Re-Check Lubric Visual check on	Weystone Series 367 ure: 110 PSI Prop 1 Drschege Live cation bolt and fastener tightness talled	2 CL	150		V		
3 4 5 6 7 8 9 10	Specification No Naneplate Data Operating Press From: To: Inspection Re-Check Lubric Visual check on Check plugs inst Check correct has Check each valv	weystone Series 367 ure: 110 PSI Prop I Drschage Line cation bolt and fastener tightness talled andle type re operation (fully stroked)	2 CL	150		V		
3 4 5 6 7 8 9 10 11 12	Specification No Naneplate Data Operating Press From: To: Inspection Re-Check Lubric Visual check on Check plugs inst	weystone Series 367 ure: 110 PSI Prop I Drschage Line cation bolt and fastener tightness talled andle type re operation (fully stroked)	2 CL	150 V				

	Trades Person		Supervisor	Field Eng or QA/QC
rint Name:	Jered Polachek		Andrew Hamilton	Dean Maffett
اد.gn:	of ADCO	/	Mr of ADCO	D. malet
Date:	15 Aug , 2019	11	Aug 15 , 2019	12-500-19



7	7 Tag No: 1623-100-VGA-07	Project No:		Table 1	3804 MEI	P
(Sub)System: 1623-Effluent Pumping Station	Area:			Mine Site	
Des	scription: CL 150 MOV BUTTERFLY VALVE PUMP 2 MOV CON VALVE	TROL Drawing:	H353004-CX001-227-248-0001_0_V3			
	CWP: 3804-CVR-023	CLIENT:	BAFFINL	AND IR	ON MIN	ES, Baffin Island
Item	Description		Yes	No	N/A	Comments and Data
1	General Data					
2	Drawing No:				-	
3	Specification No:	10 10 10 10 10 10 10 10 10 10 10 10 10 1				
4	Naneplate Data Keychove Series	367-11150				
5	Operating Pressure: 110 61					
6	From: Pmp Z					
7	To: Discharge live					
8	Inspection					
9	Re-Check Lubrication				1/	
10	Visual check on bolt and fastener tightness		1			
11	Check plugs installed				1/	
12	Check correct handle type		1/			
13	Check each valve operation (fully stroked)	1 127	V			
14	Check for locking mechanism				1/	
15	Line No	Spool 1623-EFL-102-XX	X-100			
mme	Handle brokerof V.	alve cheel.				

	Trades Person	Supervisor	Field Eng or QA/QC		
`rint Name:	Jered Polachek	Andrew Hamilton	Dean Moffett		
oign:	of ADCO	/ Of ADCO	D. Malet		
Date:	15 Aug , 2019 /	Aug 15, 2019	12-501-19		



8	8 Tag No: 1623-25-VGA-07		Project No:	3804 MEIP						
(Sub)System:		1623-Effluent Pumping Station	Area:	Mine Site						
Description:		CL 800 CS BALL VALVE DISCHARGE BURP VALVE ISOLATION	Drawing:	H35300	48-0001_0_V3					
	CWP:	3804-CVR-023	CLIENT:	BAFFINLA	ND IRON MIN	IES, Baffin Island				
Item	Descriptio	n	1010	Yes	No N/A	Comments and Data				
1	General D	ata								
2	Drawing N		200							
3	Specificati	on No: CL 800								
4	Naneplate	Data	State State							
5	Operating	Pressure: 110 PS/	1000			3/12/11/2 3/8/70/2				
6	From:	Discheren Header								
7	To:	Bur Value								
8	Inspection									
9	Re-Check	Lubrication			V	1300000				
10	Visual che	ck on bolt and fastener tightness		1/		NPT				
11	Check plug	gs installed			1/	/0/				
12	Check con	rect handle type		1/						
13	Check eac	h valve operation (fully stroked)	1//							
14	Check for	locking mechanism		1/						
15	Line N	lo Sp	ool 1623-EFL-102-XX	XX-100						
mme	ments:									

//	11	E	ш	LS	

	Trades Person		Supervisor	Field Eng or QA/QC		
Print Name:	Jered Polachek	/	Andrew Hamilton	Dean Moffett		
اوn:	a of ADCO	//	M of ADCO	D. Much		
Date:	15 Adg , 2019	1	Aug / 5 , 2019	12-500-19		



9 Tag No:		1623-25-VGA-08	Project No:	3804 MEIP					
(Sub)System:	1623-Effluent Pumping Station	Area:		Mine Site				
Des	cription:	CL 800 CS BALL VALVE DISCHARGE PRESSURE TRANSMITTER ISOLATION VALVE	Drawing:	H353004-CX001-227-248-0001_0_V			48-0001_0_V3		
	CWP:	3804-CVR-023	CLIENT:	BAFFINLA	ND IRO	N MINI	ES, Baffin Island		
Item	Description	n ?	1100	Yes	No	N/A	Comments and Data		
1	General Da	ata							
2	Drawing No					V-			
3	Specification	on No; CL 800							
4	Naneplate			<u> </u>					
5	Operating F	Pressure: 1/0 051							
6	From:	Pischeral Header.							
7	To:		er.						
8	Inspection				-	-			
9	Re-Check I	Lubrication				~			
10	Visual chec	ck on bolt and fastener tightness		1/					
11	Check plug	s installed				1			
12	Check corr	ect handle type		V					
13	Check each	h valve operation (fully stroked)		V			N-27/2		
14	Check for le	ocking mechanism		1					
15	Line No	o Sp	ool 1623-EFL-102-X	XX-100					
nme	nts:		TO THE PARTY OF TH				111111111111111111111111111111111111111		

	Trades Person	Supervisor	Field Eng or QA/QC Dean Moffett		
↑ int Name:	Jered Polachek	Andrew Hamilton			
ogn:	of ADCO	/ Am of ADCO	Q. maple		
Date:	15 Aug , 2019	Aug / , 2019	12-5-0-19		



CIS-50-057 Bolt Torque Value Record

Construction Test Sheet CIS-50-057 Bolt Torque Value Record

TAG: Bolt/Lug/Bus Torque Test			Pro	oject No:		3804 MEIP				
(Sub)System:	1623-Effluent Pum	ping Station		Area:		Mine Site				
Description:			1	Drawing:	H353004-CX0	H353004-CX001-227-248-0001_0_V3				
CWP:				CLIENT:	BAFFINLAND IR	ON MINES, Baf	fin Island			
1 Description of Test Eq 2 Calibration Date: Sept	uipment: Westward 1/2'	torque wrench								
3 Units of Measuremen					31990		****			
ITEM DESCRIPTION	LOCATION	BOLT MARKINGS/ BOLT MATERIAL	BOLT SIZE	NUMBER OF BOLTS	VENDOR SPECIFIED TORQUE (ft-lb, in- lb, n-m)	CODE MINIMUM TORQUE (ft-lb, in lb, n-m)				
1623-100-VGA-02	Valve Bolt up	B7	5/8	ef	25 A/Lb		25			
1623-100-VGA-03	Valve Bolt up	B7	5/8"	4	25 A/40		25			
1623-100-VGA-06	Valve Bolt up	B7	5/8"	4	25 Falls		25			
1623-100-VGA-07	Valve Bolt up	B7	5/8"	4	25 14/16		25			
1623-EFL-101-XXX-100	Spool to Effluent Tank	B7	5/8"	4	25 //16		25			
:3-EFL-102-XXX-100	Spool to HDPE Line	B7	5/8"	4	25 ft/6		25			
1623-PP-001A	Pump to Spools	B7	5/8"	4	25 A/6		25			
1623-PP-001B	Pump to Spools	B7	5/8"	4	25 Alin		25			
							7447975			
			Walling Co.							
Comments:	yve sper Mansferda	naked	ON FI	layes 1	3/					
	Trades Pers	son	// St	upervisor		Field Eng or C	QA/QC			
Print Name:	Jer	red Polachek		Andrew Hamilt	ton Dea	n Moffe	++			
'3n:	15 Aug , 2	of ADCO	/m	of ADC		Mehr				
Date:	15 Aug , 2	Aug 15, 2019 12-5-19								



CanTorque Inc.

14635-119 Avenue
Edmonton, AB T51, 2N9
(780) 436-2000-phone
(780) 732-9095-fax
(877) 436-4364-toll free
GST 864967997RTID001
info@cantorque.com
www.cantorque.com

Manual Certificate of Calibration

#21339

Customer Name	Adco Power Ltd	
Customer Address	8750-58 Ave, Edmonton, Alberta T6E 6G6	
Manufacturer Name	CDI	
Model Number	2503MFRMH	
Serial Number	1214600385	
Asset Number	N/A	
Maximum Capacity	250	
Ratchet Drive Size	1/2"	·
Required Accuracy	4	
Temperature Celsius	20.0	
Service Technician	Wyatt Cochrane	
Units of Measure	Lbf/ft	
Calibration Procedure	OP-112	

Calibration Data - Minimum 5 Results per Checkpoint

			Services Services	
Capacity	Torque Setting	Initial Readings as Found	Target Torque Range	Readings After Adjustments
20%	50	47.20	48.00-52.00	49.98
60%	150	145,67	144.00-156.00	146.66
100%	250	242.38	240.00-260.00	242.95

Calibration Equipment Data

Manufacturer Name	Norbar	_
Display Model #	43228	
Display Serial #	63987	_
Transducer Model #	.50625.LOG	
Transducer Serial #	86175	

Calibration Date	Aug 3, 2018
Next Calibration Due	Aug 3, 2020
Transducer Capacity	250 Lbf/ft
Transducer Accuracy	+/-0.5%

The above described instrument has calibrated in accordance with the customer's requirements and specifications using measurement equipment that is directly traceable to the NRC/Canada and/or the NIST/USA and applicable national standards.

Calibration Date: Jul 26, 2019 Technician Print/Sign: Wyatt Cochrane



CIS-60-007 Pressure Piping Report

Construction Inspection Sheet CIS-60-007 Pressure Piping Report



39 TAG: 1623-EFL-101-XXX-100					Project No:				3804 MEIP			
(Sub)System: 1623-Effluent Pumping Station					Area:			Mine Site				
Description:	Description: PUMP SUCTION HEADER					rawing:		H35	H353004-CX001-227-248-0001_0_V3			
CWP:	38	04-CVR-0)23		,	CLIENT:						fin Island
Line No	1				NO THE		Jak H			in the		10 March 2005
		static 🗕	Service	Test		-1712		☑	Pneum	atic		
1. REQUIRED SPEC		LATIONS		OPER	ATION				.=			
SYSTEM	CALCO	LATIONS		OPER	ATION	NI		TEST PH	RESSURE		Fluid	CLASS
											Fluid cat	383 MH 553
2. INSPECTION REC	ORDS	,				11 4DED (- ION		100.000			
PIPE MATERIAL	AND CLASS	DIA	LENGTH	FLAN	NGES	JMBER (With the same of t	ADED	TY		PORTS DISTANCE C/C
CS40 CF	PVC	100	300		3	****		11110	, IDED		- - -	DIOTARGE GIO
	16-16-16-16-16-16-16-16-16-16-16-16-16-1				*							
	AN AND AND AND AND AND AND AND AND AND A											
				35,1000								
3. TEST RECORDS	Test Medi	ium:		t Silling	100							
Pressure reading and	The Control of the Co	ium.					P	SI	emperatui I	re:	N	IIN
	8	1			, 			SI				1IN
Se	via To	150 -						SI				1IN
7	der Wa	et 10	st					SI SI				IIN IIN
Stress relief after well	ding.							OI			IVI	IIIV
☐ Radiographic test				etic particul	e test				□ Ha	ardness	(Brinel	I)
 Ultrasonic test Declaration of installa 	tion to the level			rant test								
4. FINAL RESULTS	tion to the legal	authority				5-1100 NG 00 A C						
			Acc	cepted		Reje	cted					
Comments:	***************************************	-		-								
Commence.												
	Tr:	ades Pers	on		/ 5	uperviso	vr.	O. 0 11 11 11 11 11 11 11 11 11 11 11 11 1		Fiold F	ing or C	24/00
Print Name:	"		ed Polache	la la	//	Andrew	****		- 7			
oʻqn:	00	Jer			MI	COLUMN TO THE OWNER OF THE OWNER OWNER OF THE OWNER OWNE			0	W -	wffe	1.1
را. ate:	15 Aug	PT 2	of ADCO	1/	10-		of ADC)	12	100	10	
Date.	I / Att	3 , 20	019		Aug	(1), 2	019		16-	ref-	17	

Construction Inspection Sheet CIS-60-007 Pressure Piping Report



40 TAG:	TAG: 1623-EFL-102-XXX-100				Project No:			3804 MEIP				
(Sub)System:	1623-Effluent Pumping Station				Area:			Mine Site				
Description:		ISCHARGE H			Drawing: H35			3004-CX001-227-248-0001_0_V3				
CWP:	38	04-CVR-023	3									fin Island
Line No	1				1000				MAIN			
	☐ Hydros	tatic -	Service	1	it			Ø	Pneum	atic		The same and the same of the same
☐ Hydrostatic — Service Test ☐ Pneumatic 1. REQUIRED SPECIFICATIONS												
SYSTEM	CALCU	LATIONS		OPER	ATION			TEST PF	RESSURE			CLASS
								Fluid Fluid cat				Same and
2. INSPECTION RECO	DRDS										riuid cat	
PIPE MATERIAL A	ND CLASS	Ţ				JMBER O		-				PORTS
		DIA LENGTH		The time the state of the state		WELD	DED THREA		ADED TY		PE	DISTANCE C/C
CS40 CP	VC	100	500	11								
		 										
									-1-207	2-10 - 11 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	n-jeri iz	
										1800180		
		-	-	_								
		-			-	-						
-											C-1070	
3. TEST RECORDS	Test Medi	LIMA:			-10		86 N	т.				
Pressure reading and	elansed time	um.					P		mperatu	re:	M	IN
110	2 851 -	1251	251				PSI				MIN	
Pressure reading and elapsed time 110 PSI - 125 PSI 7 Dey Web Test					PSI					M	MIN	
					PSI PSI			MIN			The second secon	
Stress relief after weld	ina:				0.00		P	SI			IV	IN
☐ Radiographic test			Magnetic	particul	e test					ardness	(Brinel	n
□ Radiographic test □ Magnetic particule test □ Hardness (Brinell) □ Ultrasonic test □ Penetrant test												
Declaration of installat	ion to the legal	authority:				_/						
4. FINAL RESULTS			☐ Accep	tod		Pains	to d					
1					9202	85 0 TM						
Comments:	hale	1.11	ر م	í	300	, Va	luc	De	101	1		
- piw noce leak or wife the												
- Nus to replie 1 and 14:14:50												
Comments: - Piwhole leak on Berp Valve PUC'T News To Replace 'T' and Retest (Repaired Ath)												
	Trades Person / Supervisor Field Eng or					ng or 0	QA/QC					
Print Name:		Jered	Polachek	Andrew			Hamilt	on	DeanMoffett			
n:	gn		f ADCO	/	In	of ADCO Q. ~~.						
Loate:	Aug	, 201	9	//	// Aug /5 , 2019 5-Nov-19							



SECTION 3: Electrical

- CIS-70-025 Control and Relay Panels
- PIS-70-015 Misc. Electrical Equipment
- CIS-75-027 Limit/Sensor
- CIS-70-017 Conduit and Cable Tray
- CIS-70-056 Grounding (above ground)
- CIS-70-007 Low Voltage Cables <1kV
- CTS-70-020 Electrical Motor
- PIS-50-012 Pump Installation
- PIS-70-021 UPS System Startup
- CTS-70-033 Electrical Junction Boxes
- CIS-75-029 Beacons, Sirens, Horns



SECTION 3: Electrical

CIS-70-025 Control and Relay Panels

Construction Inspection Sheet CIS-70-025 Control and Relay Panels





	Tow No.		Declare No.	Report Production					
1	Tag No: 1623-PPC-001		Project No:		3804 MEIP				
(Sub))System: 1623-Effluent Pumping Sta	ation	Area:						
Description: GTK Custom Pump Controler		olov	Drawing:	изгаоод	40,0004,0,1/2				
200			H353004-CX001-227-248-0001_0_V3						
	CWP: 3804-CVR-023		CLIENT:	BAFFINLAN	ID IRON MIN	ES, Baffin Island			
Item	Description	0.0.000		Yes	No N/A	Comments and Data			
1	General Data								
2	Drawing No:				***************************************				
3	Specification No: Pur Cup -	JZ775	CONTRO	L - 1	200	15 A			
4	Inspection			1./					
5	Acceptable in accordance with design documents Panel ground wire installed	i.	- Composition Comp	V					
6 7	Internal cooling fan			V					
8	Forced ventilation								
9	Nameplates complete			V					
10	Internal device labels complete								
11	Terminal strips labelled								
12	NEMA construction (1,3R, etc) of enclosure								
13	Field wire markers complete					***************************************			
14	Unused knockouts plugged	- 19-723044		//		1 100 1100 1100			
15	Convenience outlet phased		50978	/		1			
16	internal lighting complete				2014				
17	Floor entrances sealed								
18	Touch up paining complete								
19	Annunciator wiring bundled and formed to allow re	emoval of a single pr	int wiring without	V					
2024/40	shutdown. Futere points are not blocked		1 770			is is the second			
20 Comme	20 Doors have been secured in place. Dors open, close, and seal correctly								
	Trades Person		Field Eng or QA/QC						
Print N	ame: Kris K	rahl /	Andrew Hamilton Dean Moffe			offett			
gn:	/6 of AI	oco /	of Al	DCO [Q. Max	+			
Date:	Aug 3(, 2019		Aug 15 , 2019		2-Sep.	.19			



SECTION 3: Electrical

PIS-70-015 Misc. Electrical Equipment

Pre-Operational Inspection Sheet PIS-70-015 Misc. Electrical Equipment





2 Tag No:		1623-PLC-001	Project	No:	3804 MEIP						
(Sub)System: 1623-Effluent P		1623-Effluent Pumping Station	A	rea:		Mine Site					
Description: GTK Custom Effluent Pump Control Panel			Draw	ing:	H35300	3004-CX001-227-248-0001_0_V3					
	CWP:	3804-CVR-023	CLIE			LAND IRON MINES, Baffin Island					
Item	Description		Wester *		Yes	No N/A	Comments and Data				
1	General Data	3. 2019000									
2	PO No:										
3	Туре:			100000000000000000000000000000000000000							
	4 Rating: 3R - 600V 3P										
5											
	6 Model No:										
	7 Style No:										
	8 Inspection 9 Construction Completion status										
9		3000 A 340 300 11121 20 4 4 3 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	***		/						
10	Preservation rei				/						
11	Equipment clea				/						
	12 Earthing correctly installed. Megger-test performed 13 Livening Up Notice (LUN) obtained										
13			- AND STATE OF THE								
14	In Operation tag										
15		ements satisfied bles are complete, tight and correct phasing.	/								
16											
17 18		chambers are clean and free from dust and in resistance of equipment power circuits. (Mi			V						
19		ard cubicle number and labelling is correct.	iii value – 10 ivi.)		V						
20		se ratings at feeder are correct for application	n		/						
21		feeder controls and Instrument Control Syste	THE RESERVE AND ADDRESS OF THE PARTY OF THE								
22		nt MCB / fuse ratings and relay settings are of		-	/	322					
23		nction check equipment to manufacturer's in			/						
24		irth loop impedance, if practical and safe to c			-	11/					
25		of anti-condensation heater circuits.									
26		and settings of alarms and trips.									
27		mergency Shutdown (ESD) trips and ICS int	erfaces.	-	1	V					
28											
Comme			The second secon		V						
		Trades Person	Supervisor			Field Eng or QA/QC					
Print N	ame:	Kris Krohl	A AVEREN HANIOR			Dean Moffett					
<u>3n:</u>		16 of Apro	/pr of ADIO			D. Moffers					
Date:		08/31/2019	1 Ay	15,2015	12-Sep-19						

Pre-Operational Inspection Sheet PIS-70-015 Misc. Electrical Equipment



7	Tag No:	1623-XV-001A	Project No:			3804 MEI	P		
(Sub)	System:	1623-Effluent Pumping Station	Area:			Mine Site			
Desc	cription:	120V Motorized Butterfly Valve	Drawing:	H3530	004-CX0	01-227-2	48-0001_0_V3		
	CWP:	3804-CVR-023	CLIENT:	BAFFINL	AND IR	ON MIN	ES, Baffin Island		
Item	Description			Yes	No	N/A	Comments and Data		
1	General Data	5-780-00-00-00-00-00-00-00-00-00-00-00-00-0		_					
2	PO No:								
3	Type: Nen	5 4×							
4	Rating:	1200	AND THE STATE OF T						
5	Serial No:	184308T00102	3		-				
6	Model No:	KEUD63HVPD OC	2004						
7	Style No:				-				
8	Inspection						CONTROL OF THE PROPERTY OF THE		
9	Construction Cor			/					
10	Preservation rem					V			
11	Equipment clean			V					
12		y installed. Megger-test performed		V					
13		ce (LUN) obtained				V			
14	In Operation tag					V			
15	All safety require				/				
16		les are complete, tight and correct phasing.		V					
17		hambers are clean and free from dust and		V					
18		resistance of equipment power circuits. (M	in value = 10 M:)	V					
19		rd cubicle number and labelling is correct.		V					
20		e ratings at feeder are correct for application	A CONTRACTOR OF THE CONTRACTOR	/					
21		eeder controls and Instrument Control Syste		V	economics 	are a			
22		MCB / fuse ratings and relay settings are of		V					
23		ection check equipment to manufacturer's in							
24		th loop impedance, if practical and safe to c	lo so.						
25		of anti-condensation heater circuits.				V			
26		and settings of alarms and trips.				15			
27		nergency Shutdown (ESD) trips and ICS int	erfaces.						
28	Compile red line	drawing where applicable.							
Comments: Hardle on actualizable Danaged.									
Trades Person Supervisor Field Eng or QA/QC						Eng or QA/QC			
Print N	lame:	Kris Krahl	Andrew Ham	nilton	De	94 1	10ffet+		
n:		of ADCO	// of AD	СО	Д.	MA	pe-		
Date:		Aug 3 , 2019	Aug /5 , 2019		12.	Sep.	- 19		

Pre-Operational Inspection Sheet PIS-70-015 Misc. Electrical Equipment





8	Tag No:	1623-XV-001B	Project No:	3804 MEIP						
(Sub)	System:	1623-Effluent Pumping Station	Area:			Mine Site				
Desc	cription:	120V Motorized Butterfly Valve	Drawing:	H3530	004-CX00	01-227-24	48-0001_0_V3			
	CWP:	3804-CVR-023	CLIENT:	BAFFINL	AND IR	ON MIN	ES, Baffin Island			
Item	Description			Yes	No	N/A	Comments and Data			
1	General Data	liet specimen den men en en kellinge selver dan der kelt seuer e								
2	PO No:				-					
3	Type:	Nena 4x		0,270						
4	Rating:	170V								
5	Serial No:	184308T0010Z	3							
6	Model No:	184308T0010Z	V4							
7	Style No:									
8	Inspection									
9	Construction Co	mpletion status	1. 1.00 00000 48 12-217211220000	V			A			
10	Preservation rer	noved				V				
11	Equipment clear	AND	_16.1374 172-44 101-101-1204-1	V						
12	Earthing correct	ly installed. Megger-test performed		V						
13	Livening Up Not	ice (LUN) obtained				V				
14	In Operation tag					V				
15	All safety require				V					
16		oles are complete, tight and correct phasing		V						
17		chambers are clean and free from dust and								
18		resistance of equipment power circuits. (M	in value = 10 M:)		,					
19		rd cubicle number and labelling is correct.		1						
20		e ratings at feeder are correct for application		1						
21		feeder controls and Instrument Control Syst	Provide the poster of the control of	1						
22		t MCB / fuse ratings and relay settings are of								
23		nction check equipment to manufacturer's in		0						
24		rth loop impedance, if practical and safe to	do so.			1				
25		of anti-condensation heater circuits.				V				
26		and settings of alarms and trips.	Caral Parish (arter)	V						
27		mergency Shutdown (ESD) trips and ICS int	епасез.			V				
28	Wash of	drawing where applicable.		V		ļ. J				
Harde on andording wheel Danged.										
		Trades Person	Supervisor			Field E	ing or QA/QC			
Print N	ame:	Kris Krahl	Andrew Ha	milton	De	an M	loffet+			
jn:		of ADCO	of A	ADCO	Ll.	May	4			
Date:		Aug 3 , 2019	/ Aug /5 , 2019	9	12-	Sep-	19			



CIS-75-027 Limit/Sensor

Construction Inspection Sheet CIS-75-027 Limit Switch/Sensor (Level, Flow, Pressure, Temperature)



5	Tag No:	1623-FIT-	001	Project N	o:	3804 MEIP					
(Sub))System:	1623-Effluent Pun	nping Station	Are	a:	Mine Site					
Des	cription:	4-20mv Flow									
A STATE OF	CWP:	3804-CVR		CLIEN'	Company of the state of		ES, Baffin Island				
Item	Description	500 7 041	. 020		Yes	No N/A	Comments and Data				
1	General Data	3									
2	Drawing No:	Per CWP					- 000				
3	Specification No:	1000	1,000	AW			***************************************				
	4 Nameplate Data:										
5 Manufacturer: Endress & Klauser											
6	Type:	44									
7	Model:	ProMAG	400								
8	Serial No:	J	NCO FE	216000							
9	Sensor Element		nincuduc	electod	5.						
10	Specifications pro										
11	Transmit Range:	4-20	DNA								
12	Engineer Range:										
13	Inspection-										
14		pressure, temp, flow, lin	nit, etc)								
16	Open Switch set		PLC Set	po was Threshol	d		,				
17	Open switch mod			1 1 1							
18	Closed switch se		PUC Set	points - thushol	a v						
19	Closed switch mo	do dotting doniedt	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,								
20	Ellectrical connection			-	V		Auto Barron I				
Print N	Name:	Trades Po	Kris Krahl		visor ew Hamilton of ADCO	Field Deen A	Eng or QA/QC				
n:		//	of ADCO	/m	- American	10 C	10				
Date:		Aug 31	, 2019	Aug 15	, 2019	16- Jeh	7- [7]				
				Y			2				

Construction Inspection Sheet CIS-75-027 Limit Switch/Sensor (Level, Flow, Pressure, Temperature)





6	Tag No:	1623-PIT-	-001	Project No:		3804 MEIF	
(Sub)	System: 1	623-Effluent Pun	nping Station	Area:		Mine Site	
Desc	cription:	4-20mv Pressu	经验证证据 计图 一种 包括 2000	Drawing:	H35300	4-CX001-227-24	
	CWP:	3804-CVR		CLIENT:			S, Baffin Island
Item	Description	3001 011	023	-	Yes	No N/A	Comments and Data
1	General Data				163	NO N/A	Comments and Data
2	Drawing No:	per lu	10				
3	Specification No:	po a					
4	Nameplate Data:	INTO SECULIAR SECULIA					
	Manufacturer:	Endress	+ House				
		4X	NAUSO	A CONTRACTOR			
	Model:	cercha	- M				1000
8	Serial No:	000.02	NC019 B15/2	a			
9	Sensor Element Type:		0001301712	-3			
	Specifications process F	Range: - 10	0 to 100 KH	20			
	Transmit Range:		OMA	4			
	Engineer Range:		V /				
	Inspection-						
14	Correctly set (ie, pressu	re, temp, flow, lim	nit, etc)	Contractor of the Contractor			
16	Open Switch set		2 DIC Cet pois	Ae	1		
17	Open switch mode settir	ng correct	s processo par	4.3			
	Closed switch set	-	OLC Set Don	K			
	Closed switch mode set	ting correct					
20	Ellectrical connections of	orrect			V		
21	Electrical certification co	rrect					
		Trades Pe	rson	Supervisor		Field E	ng or QA/QC
Print N	ame:		Kris Krahl	// Andrew Han	nilton	Dean M	offe++
дn:		1/2	of ADCO	h of AE	со	D. ma	+
Date:		Aug 31 ,	2019	Aug 5 , 2019		12-Sep	-19



CIS-70-017 Conduit and Cable Tray

Construction Inspection Sheet CIS-70-017 Conduit and Cable Tray



Tag No: 1626 CABLE TRAY Project No: 3804 MEIP							
(Sub)System:	1623-Effluent Pumping Station	Area:			Mine Site	
Des	scription:	6" GALVINIZED LADDER TYPE TRAY	Drawing:	H353			8-0001_0_V3
	CWP:	3804-CVR-023	CLIENT:				S, Baffin Island
Item	Description			Yes	No	N/A	Comments and Data
1	General Data	(1944)	- American Company	103	110	11/15	Comments and Data
2	Drawing No.	1					
3	Specifiation No	The second secon			- 1 500		
4	Inspection-Gen						
5	Installation ne	at and evenly spaced and in accordance with the dide and standards	rawings, specification and				
6	All covers, firest	tops, and partitions are installed					1800-79
7		us correct per specification - bend free of defect					THE STATE OF THE S
8		specification and drawing		-			
9		en instrumentation conduit or cable and power cables sh	all be according to	/			Marie Communication of the Com
10	Spacing from he	ot pipes and hot surfaces has been maintained according	to specification	1/			
		Tray permanently and effectively earthed, including prop		V /			
11	necessary.	, , , , , , , , , , , , , , , , , , , ,		V			
12	Wall penetratio	ns as per drawings and specifications				V	11990
13		ncies list closed-out	118590 11	1./			
14	Inspection - Cor	nduits					
-	Conduits clean,	stub-ups protected, conduit seals installed on all open e	nds, damage during	T		. /	
15	construction rep						
16	6 Supports adjacent to terminal fittings						
17	Sufficient pull jo	pints				1	1000
18		s as shown on drawing				V	
10	Proper fittings i	nstalled with threads fully engaged, proper sealing used,	, no wrench cuts, conduit ends			V	The state of the s
19		and covers installed					
20		s installed per drawings					
21		and PVC coated conduits installed as per drawing				~	
22		levelled and supported as per drawing with proper hubs	, locknuts and bushings		2	V	1991 1111111111111111111111111111111111
- 22	installed						
23	Seals checked for	Tet 100			0.000		
	23a - Correct lo						
	23b - Properly p		O CONTRACTOR OF THE CONTRACTOR				
	23c - Seal comp	11000			1	V	
24	Inspection - Cab						2.100000
25		erly spaced and tied down		V			
26		er and use of barriers where necessary and in accordance	e to design requirements	V			
27	<u> </u>	accordance with design requirements		V			
Comme	ents:						
Trades Person Supervisor Field Eng or						ng or QA/QC	
Print N	lame:	Kris Krahl	// Andrew Hamil	ton	Dea	n Mo	ffet+
;n:		of ADCO	Mh of ADC	0	0.	May	4
Date: Aug 3 , 2019 Aug / C , 2019 12 - See					- Sep	- 19	



CIS-70-056 Grounding (above ground)

Construction Inspection Sheet CIS-70-056 Grounding (above ground)



	Tag No:		Project No:	3804 MEIP						
(Sub)	System:	1623- Effluent Pump Station	Area:		Mi	Ine Port	Sita			
		1025- Efficient Fump Station								
Desi	cription:		Drawing:	H3530	04-4000	0-260-28	34-0001-0001r0			
	CWP:	CVR-041	CLIENT:	BAFFINL	AND IR	ON MIN	IES, Baffin Island			
Item	Description			Yes	No	N/A	Comments and Data			
1	General Data	/ 11 / 16 / 2 - 2 / 16 / 2								
2	Drawing No:	- V/A	000 No. 2000 Co.	2430.000						
3	Specification No	107A	1111 (1795 (1.14) (1.14)							
4	Inspection	- In South House Control								
5	Materials confor	m to specification	5-40-1-10-10-10-10-10-10-10-10-10-10-10-10-	1						
6	Grounding instal	lations conform to drawing and specification		V						
7		equipment conform to project standard drawing	3.00.000	~						
8		ize and insulation colour as per drawing		-						
9		tions checked (no cold joints or burn outs)	Was districted to			~				
		tions are insulated				~				
		ng rod resistance to ground measurements in a	ccordance with specification -	-	-		***			
11	record these me		openiosis.			V				
7.7	between ground	ment and structural steel installed as per draw conductor and tagged equipment bus bars, tag urface in addition to all other items designed or	ged equipment enclosures,	~		7				
13	sections of cable	en ground conductor and conduit, metal junction tray verified and found correct	on boxes and between	V						
		and installation conform to specification		V						
15	All revisions reco	orded on "As built" drawing	7-11/0	/						
16	"As built" signed	off, transmitted and recorded		/						
17	Manufacturer's c	commissioning procedures available and follower	ed			/				
18	Manufacturer's c	commissioning report available and recorded	1/4/1// - 1/4/1// - 1/4//			1				
19	Relative deficien	cies list closed-out								
Comme	Comments:									
Trades Person Supervisor						Field I	Eng or QA/QC			
Print N	ame:		Kyle Krahl		De	11	noffet t			
'gn:		400000000000000000000000000000000000000	Kul		D.	my	RX			
Date:			NOU 14 2019		15	-Nov	1-19			



CIS-70-007 Low Voltage Cables <1kV



Tag No	: 16	1623-PPC-001-P1	Project No:	100		3804 ME	IP
(Sub)System:	1623-Effluent Pumping Station	Area:			Mine Sit	e
Des	scription:	vg 1kV TECK- Pump Power Feed to Pump M Controler	Drawing:	H353	004-CX0	01-227-2	248-0001_0_V3
	CWP:	3804-CVR-023	CLIENT:	BAFFINI	AND IR	ON MIN	NES, Baffin Island
16	Origin:	1611-MDB-010	Destination:		16	23-PPC-	001
Item	Description	The state of the s		Yes	No	N/A	Comments and Data
1	Cable numbered	and marked correctly on both ends and transi	ts		1		
2	Cable size and ty	pe correct		1			
3 Earth conductor installed and connected							
4	Cable support an	d enclosing systems satisfactory		/			
5		e measures (kick plates) are fitted correctly				1	
6		es size and type / spacing correct		V			
7	7	ormation to engineering Instruction		V			
8		within manufacturer's recommendations		V			
9	The state of the s	completed satisfactorily		V,			
10		correct and tightened satisfactorily		V		,	
11		washers have been fitted to gland, where rec	quired	-		V	
12		ith area classification	W-0	1			
13	Lockouts and shr Bedding correct	ouding correct		V .		├	
14		up and terminated satisfactorily	The Facility of the Control of the C	- V		-	
15		nation completed according to procedure. Atta	sch songrate I V Coble	V		-	
10	Termination Proc		ich separate LV Cable			V	
17		ed and bolts tightened to correct torque rating	water wrong it.	1			
18	Phase sequence			1			
19	Check that the ea	arth bonding is correct and in accordance with	the approved project drawings	· /			
	and specifications		The same of the sa	V			
20		ables, ensure that the cables have been earthe				1	
		he approved project electrical drawings and sp	pecifications			v	
21		h conductor / screen / sheath okay		1			
22		/ sheath earthed at both ends		V			
23		cable routing and segregation is correct		V			
24		is no damage to the cores, termination chaml					
	revision of drawin	orrect and that crimped fittings are satisfactory	. Cable terminated to latest	V			
25		re cores and screens have been earthed and o	and and to the same in a set of				
25		e cores and screens have been earthed and c ject drawings and specifications	conform to the requirements of			1	
26		closure covers have been replaced and no bo	Its are missing	-/			
27	No unauthorised		no dro micomy	1/			
28		ce of installation satisfactory		1			
29		on conductors satisfactory	HIN (motor)	1			
	ents: Cables requi	re Lables					
Trades Person Supervisor						Field	Eng or QA/QC
Print Name: Kris Krahl Andrew Hamilton			lton	De	20	Moffett	
n: of ADCO / of ADCO Q. www.					no		
Date:		Aug 3/ , 2019	/ Aug (, 2019		12	- Sep	1- (9



Tag No:	17	1623-PP-001A-P1	Project No:		3	804 MEI	P	
	System:	1623-Effluent Pumping Station	Area:			Mine Site		
			Drawing:	H3530	04-CX0	01-227-2	48-0001_0_V3	
Desc	cription:	3c10awg 1kV TECK- Power to pump 1	Drawing.	113330	104-CX0	J1 221 2	40 0001_0_v3	
	CWP:	3804-CVR-023	CLIENT: B	BAFFINL	AND IR	ON MIN	ES, Baffin Island	
	Origin:	1623-PPC-001	Destination:		1623-PP-001A			
Item	Description			Yes	No	N/A	Comments and Data	
1	Cable numb	ered and marked correctly on both ends and transits			_ <			
2		nd type correct		V				
3		ctor installed and connected		V				
4		ort and enclosing systems satisfactory		V		,		
5		tective measures (kick plates) are fitted correctly		,		V		
6	Cable clamp	s / ties size and type / spacing correct		V				
7		ng / formation to engineering Instruction		V				
8	Bending rad	ius is within manufacturer's recommendations		V				
9		lation completed satisfactorily		V				
10	Cable gland	s size correct and tightened satisfactorily		_				
11	Ensure IP s	ealing washers have been fitted to gland, where required				V		
12	Glands com	ply with area classification		\				
13	Lockouts an	d shrouding correct		/				
14	Bedding cor	rect		\				
15		made up and terminated satisfactorily	- 1/2/2 EU	/				
16	LV Cables 7	Termination completed according to procedure. Attach se	parate LV Cable		25	1		
10		Procedure sheet	TO THE MATERIAL PROPERTY OF THE PROPERTY OF TH			V		
17	Cable lugs	crimped and bolts tightened to correct torque rating		\		1 5000 - 5		
18		ence verified/checked		V				
19	Check that	the earth bonding is correct and in accordance with the a	pproved project drawings	1				
13	and specific			V				
20		ore cables, ensure that the cables have been earthed in	accordance with the			,		
20	requirement	ts of the approved project electrical drawings and specific	cations			1		
24		f earth conductor / screen / sheath okay		1				
21		uring / sheath earthed at both ends		1				
22		t the cable routing and segregation is correct		1	-			
23		there is no damage to the cores, termination chamber la	wout is estisfactory, core	_ v	-	1		
24	Check that,	there is no damage to the cores, termination chamber is no correct and that crimped fittings are satisfactory. Cal	lyout is satisfactory, core	1	6			
	5000 (m) 15		de terrimated to latest	V		1		
	revision of		to the requirements of			-		
25	Confirm tha	t spare cores and screens have been earthed and confo	rm to the requirements of			V		
		ed project drawings and specifications		-		-		
26	Committee Commit	all enclosure covers have been replaced and no bolts ar	e missing	V,		-		
27		rised modifications		V/		-		
28		earance of installation satisfactory		V,	-	+		
29	CONSCIONATION DISTRIBUTION OF THE PROPERTY OF	check on conductors satisfactory				400		
Commo	ents: Cables	require Lables						
1								
Š.								
l								
			1			0.000		
1		Trades Person	Supervisor			Field	Eng or QA/QC	
Print 1	Name:	Kris Krahl	Andrew Hamil	ton	De	-91	Moffett	
n: of ADCO of ADCO Q. Mallet					the			
. —			1		17	2504	-19	
Date:		Aug 3 , 2019	/ Aug , 2019		1	-756	Name and the second sec	



Tag No:	18	1623-PP-001B-P1	Project No:	3804 MEIP					
(Sub)	System:	1623-Effluent Pumping Station	Area:		Mine Site				
	cription:	3c10awg 1kV TECK- Power to pump 2	Drawing:	H353	004-CX0	01-227-2	48-0001_0_V3		
	CWP:	3804-CVR-023	CLIENT:	BAFFINI	AND IR	ON MIN	IES, Baffin Island		
	Origin:	1623-PPC-001	Destination:			1623-PP-001B			
Item	Description	1025 1,10 001		Yes	No	N/A	Comments and Data		
1	[21-21-20-20-20-0-10-10-20-20-0-20-0-10-10-10-20-0-20-0-20-0-20-0-20-0-20-0-20-0-20-0-20-0-20-0-20-0-20-0-20-0	and marked correctly on both ends and trans	sits	1,00	1	.,,,,			
2	Cable size and ty			1	· ·		66		
3		installed and connected		1					
4	THE CALL OF STREET ASSESSMENT ASS	d enclosing systems satisfactory		1					
5	The Control of the Co	re measures (kick plates) are fitted correctly				1			
6		es size and type / spacing correct		1		_			
7		ormation to engineering Instruction	32	1					
8		within manufacturer's recommendations		1					
9		completed satisfactorily		1					
10	Cable glands size	e correct and tightened satisfactorily	The second control of	1					
11		g washers have been fitted to gland, where re	equired			1			
12	Glands comply w	rith area classification		/					
13	Lockouts and shi	rouding correct		1					
14	Bedding correct			V					
15	Cable ends made	e up and terminated satisfactorily		/					
16	LV Cables Termi Termination Proc	nation completed according to procedure. At sedure sheet	tach separate LV Cable			1			
17	Cable lugs crimp	ed and bolts tightened to correct torque rating	g	1					
18	Phase sequence	verified/checked	700 maria de la companya del companya de la companya del companya de la companya	1					
19	Check that the ea	arth bonding is correct and in accordance wit	h the approved project drawings	1					
20	On single core ca	ables, ensure that the cables have been earth	hed in accordance with the			,			
		he approved project electrical drawings and				√			
21		th conductor / screen / sheath okay		1					
22	Cable armouring	/ sheath earthed at both ends		1					
23	Confirm that the	cable routing and segregation is correct		1					
24	Check that, there	is no damage to the cores, termination char	mber layout is satisfactory, core						
	identification is c	orrect and that crimped fittings are satisfactor	ry. Cable terminated to latest	1					
	revision of drawing	ng.		11750					
25		re cores and screens have been earthed and eject drawings and specifications	conform to the requirements of			V			
26		closure covers have been replaced and no b	olts are missing	1					
27	No unauthorised			1					
28	Overall appearar	nce of installation satisfactory	2.00	1					
29		on conductors satisfactory		V					
	nts: Cables requi			*****		33	73		
li)									
6-111		Trades Person	Supervisor			Field	Eng or QA/QC		
Print N	lame:	Kris Krahl	Andrew Hamil	ton	Dec	An M	noffett		
<u>,n:</u>		of ADCO	of ADC	0	0	MA	for		
Date:		Aug 3l , 2019	/ Aug / , 2019		1	17-Jep-19			



Tag No:	19 1623-PPC-001-C1	Project No:		4 1 3	804 ME	IP.	
(Sub)System: 1623-Effluent Pumping Station	1623-Effluent Pumping Station Area: Mine Site					
	13c14awg 1kV TECK- Pump status lights and PLC inputs						
Des	cription: to M1, Starter and holding contacts	Drawing:	H3530	H353004-CX001-227-248-0001_0_V3			
	CWP: 3804-CVR-023	CLIENT: [BAFFINL	INLAND IRON MINES, Baffin Island			
	Origin: 1623-PLC-001	Destination:		162	23-PPC-	001	
Item	Description		Yes	No	N/A	Comments and Data	
1	Cable numbered and marked correctly on both ends and transits			1			
2	Cable size and type correct		V				
3	Earth conductor installed and connected		/				
4	Cable support and enclosing systems satisfactory		1		200		
5	Confirm protective measures (kick plates) are fitted correctly				√		
6	Cable clamps / ties size and type / spacing correct		V				
7	Cable spacing / formation to engineering Instruction		V				
8	Bending radius is within manufacturer's recommendations		V			Faccounce	
9	Cable installation completed satisfactorily		V				
10	Cable glands size correct and tightened satisfactorily		_		,		
11	Ensure IP sealing washers have been fitted to gland, where required		,		√		
12	Glands comply with area classification		V				
13	Lockouts and shrouding correct		V				
14	Bedding correct		V/				
15	Cable ends made up and terminated satisfactorily	parata I.V. Cabla	V				
16	LV Cables Termination completed according to procedure. Attach se Termination Procedure sheet	parate LV Cable			1		
17	Cable lugs crimped and bolts tightened to correct torque rating	SSW. DEUTSCHENDING TOWN	\				
18	Phase sequence verified/checked		\				
19	Check that the earth bonding is correct and in accordance with the a and specifications	pproved project drawings	1				
20	On single core cables, ensure that the cables have been earthed in	accordance with the			1		
0.0019	requirements of the approved project electrical drawings and specific	cations			V		
21	Continuity of earth conductor / screen / sheath okay		\				
22	Cable armouring / sheath earthed at both ends		/				
23	Confirm that the cable routing and segregation is correct		\				
24	Check that, there is no damage to the cores, termination chamber la						
	identification is correct and that crimped fittings are satisfactory. Cab	le terminated to latest	V				
	revision of drawing.						
25	Confirm that spare cores and screens have been earthed and confo	m to the requirements of			1		
	the approved project drawings and specifications		,		•		
26	Check that all enclosure covers have been replaced and no bolts are	e missing	V,				
27	No unauthorised modifications		V .				
28	Overall appearance of installation satisfactory Continuity check on conductors satisfactory		V/				
29	*		V				
Comme	ents: Cables require Lables						
1							
Trades Person / Supervisor					Field	Eng or QA/QC	
Print N	lame: Kris Krahl	Andrew Hamilt	on	Dee	1 M	of fatt	
n:	o of ADCO	of ADC	0	Q. 1	Mex	4	
Date: Aug 3 , 2019 Aug 5 , 2019 12-5-				- 19			



Tag No:	20	1623-PLC-001-P1	Project No:	18 60	3804 MEIP					
(Sub)	System:	1623-Effluent Pumping Station	Area:			Mine Sit	e			
Desc	cription:	3c10awg 1kV TECK- Feed to PLC Control Panel	Drawing:	H353	004-CX0	01-227-2	48-0001_0_V3			
A STATE OF	CWP:	3804-CVR-023	CLIENT:	BAFFINI	AND IR	ON MIN	IES, Baffin Island			
	Origin:	WTP 120/208V Panel	Destination:			23-PPC-				
Item	Description			Yes	No	N/A	Comments and Data			
21" (55-6-5,631)	Comment of Control of Control	bered and marked correctly on both ends and transits		163	1	N/A	Comments and Date			
2		and type correct		-/	_ v	1				
3		uctor installed and connected		1						
4	Cable supp	ort and enclosing systems satisfactory		1						
5 Confirm protective measures (kick plates) are fitted correctly										
6	Cable clam	ps / ties size and type / spacing correct		1						
7	Cable space	ing / formation to engineering Instruction		1						
8	Bending ra	dius is within manufacturer's recommendations		/						
9		llation completed satisfactorily		/						
10		ds size correct and tightened satisfactorily		/						
11		sealing washers have been fitted to gland, where required	1			V				
12		nply with area classification		/						
13		nd shrouding correct		V						
A 170 C A 100	Bedding co			V						
		made up and terminated satisfactorily			<u> </u>					
8	Termination	Termination completed according to procedure. Attach son Procedure sheet	eparate LV Cable	U		1				
17		crimped and bolts tightened to correct torque rating		/						
18		uence verified/checked		V						
	and specific			gs 🗸						
20	500	ore cables, ensure that the cables have been earthed in				1				
		its of the approved project electrical drawings and specifi	cations			V				
21		of earth conductor / screen / sheath okay		V			and the second s			
		ouring / sheath earthed at both ends	<u> </u>	V,						
		at the cable routing and segregation is correct		V	_					
24		, there is no damage to the cores, termination chamber la		TOWN I						
	revision of	on is correct and that crimped fittings are satisfactory. Cal	ole terminated to latest	1						
		at spare cores and screens have been earthed and confo	rm to the requirements	of .						
25		at spare cores and screens have been earthed and como ed project drawings and specifications	ini to the requirements	OI		1				
26		all enclosure covers have been replaced and no bolts ar	e missina	1						
		prised modifications	C IIII33IIIg	1/						
	108.40. 2071 1802 030.00	pearance of installation satisfactory		1						
		check on conductors satisfactory		1						
omme	nts: Cables	require Lables			•	,				
		Trades Person	Supervisor	a son avvorantilita (A		Field	Eng or QA/QC			
Print N	ame:	Kris Krahl	Andrew Han	7-1-7	De	in M	loffett			
n:		of ADCO	of AL	со	DR.	My	X_			
Date: Aug 31, 2019 / Aug 15, 2019 12-Sep-1			- 10							



Tag No:	21	1623-PP-	001A-P1	W. Paris	Project No:	3804 MEIP					
)System:	1623-Effluent P			Area:			Mine Sit	e		
1000											
Des	scription: 20	:12awg 1kV TECK- V	alve 1 actuating Powe	er	Drawing:	H3530	004-CX0	04-CX001-227-248-0001_0_V3			
	CWP:	3804-C	VR-023		CLIENT: E	BAFFINL	AND IR	ON MIN	IES, Baffin Island		
	Origin:	1623-P	LC-001		Destination:		163	23-XV-0	01A		
Item	Description	3001-00-00-00-00-00-00-00-00-00-00-00-00-				Yes	No	N/A	Comments and Data		
1		and marked correctly	on both ends and tra	nsits			V				
2	Cable size and ty	pe correct	\								
3	3 Earth conductor installed and connected										
4 Cable support and enclosing systems satisfactory											
5 Confirm protective measures (kick plates) are fitted correctly											
6		es size and type / spa				_					
7		ormation to engineering				V					
. 8		within manufacturer's				V					
9		completed satisfacto				V					
10	The state of the s	correct and tightene	COLUMN CONTRACTOR CONT			V		,			
11		washers have been	fitted to gland, where	required				V			
. 12		ith area classification				V,					
13	Lockouts and shr	ouding correct									
14	Bedding correct					V,					
15		up and terminated s									
1.6	Termination Proc				parate LV Cable			1			
17		ed and bolts tightened	I to correct torque rati	ing		V					
18	Phase sequence			-							
19	Check that the ea and specification	Sanction of the control of the contr	and in accordance w	ith the ap	proved project drawings	1					
20	On single core ca	ables, ensure that the	cables have been ear	rthed in a	ccordance with the			1			
9250	requirements of t	he approved project e	lectrical drawings and	d specific	ations			~			
21	Continuity of eart	h conductor / screen	sheath okay			/					
22	Cable armouring	/ sheath earthed at be	oth ends			\					
23	Confirm that the	cable routing and seg	regation is correct			\					
24					out is satisfactory, core						
			d fittings are satisfact	tory. Cabl	e terminated to latest	1					
	revision of drawir										
25		re cores and screens ject drawings and spe		nd confor	m to the requirements of			1			
26		closure covers have t		bolts are	missina	1					
27	No unauthorised					1					
28		ce of installation satis	factory			1					
29		on conductors satisfa				V					
-	ents: Cables requi	re Lables					,		•		
	•										
l											
		Trades	Person		Supervisor			Field	Eng or QA/QC		
Print N	lame:	1/-	Kris Krahl	/	Andrew Hamilt	on	De	an 1	Moffett		
<u>n:</u>			of ADCO	//	of ADCC)	Q.	Ma	m		
Date:		Aug 3	, 2019	/ </td <td>Aug , 2019</td> <td></td> <td></td> <td>1-5</td> <td>cp-19</td>	Aug , 2019			1-5	cp-19		



Tag No:	22	1623-PP-001B-P1	Project No:		3	804 MEII	P
	System:	1623-Effluent Pumping Station	Area:			Mine Site	
	eription:	2c12awg 1kV TECK- Valve 2 actuating Power	Drawing:	H3530	04-CX0	01-227-2	48-0001_0_V3
	CWP:	3804-CVR-023	CLIENT:	BAFFINL	AND IR	ON MIN	ES, Baffin Island
	Origin:	1623-PLC-001	Destination:		163	23-XV-00	01B
	Description			Yes	No	N/A	Comments and Data
		ered and marked correctly on both ends and transits			1		
1000		nd type correct		1	1.000		
3		ctor installed and connected		1			
4	Cable suppo	rt and enclosing systems satisfactory		V		,	
5	Confirm prot	ective measures (kick plates) are fitted correctly		-,		V	
6	Cable clamp	s / ties size and type / spacing correct		V,			
7	Cable spacir	ng / formation to engineering Instruction		V,	333		
8	Bending radi	us is within manufacturer's recommendations	22	V,			
9		ation completed satisfactorily		1			
10	Cable glands	s size correct and tightened satisfactorily	rod	V	-	./	
11		ealing washers have been fitted to gland, where requi	red	1		V	
12		oly with area classification		/	-	-	
13		d shrouding correct		- V	_		
14	Bedding con		The state of the s	V/		-	
15	Cable ends	made up and terminated satisfactorily	soparato I V Cable	V		-	
16	Termination	ermination completed according to procedure. Attach Procedure sheet	i separate LV Cable			1	
17		rimped and bolts tightened to correct torque rating	an war	V .		-	
18	Phase seque	ence verified/checked		1		-	
19	and specific	he earth bonding is correct and in accordance with th ations	111	1			
20	On single co	re cables, ensure that the cables have been earthed	in accordance with the			1	
		s of the approved project electrical drawings and spe	cifications	,			
21		f earth conductor / screen / sheath okay		V,		_	
22		uring / sheath earthed at both ends		V,		ļ	
23		the cable routing and segregation is correct		V		-	
24	Check that, identification revision of d	there is no damage to the cores, termination chambe h is correct and that crimped fittings are satisfactory.	er layout is satisfactory, core Cable terminated to latest	1			
25	Confirm that	spare cores and screens have been earthed and co	nform to the requirements of			1	
	the approve	d project drawings and specifications all enclosure covers have been replaced and no bolts	are missing	./			
26		rised modifications	are missing	1/			27%
27		earance of installation satisfactory	AUG. 11. 11. 11. 11.	1	- 100		
28 29		heck on conductors satisfactory		1			
	And the second second second	require Lables					
—		Trades Person	/ Supervisor			Field	Eng or QA/QC
Print N	Name:	Kris Krahl	Andrew Hami	lton	De	can 1	Moffet+
n:		of ADCO	of ADO	co	Q.	My	cp.
Date:		Aug 3(, 2019	// Aug (§ , 2019		ľ	2-Se	P-19



Tag No:		1623-PP-001A-C1		Project No:			3804 ME	IP
(Sub)System:	1623-Effluent Pumping Station	78	Area:			Mine Sit	e
Des	scription: 2	epc16awg 300V TECK- Valve 1 Control/Monitoria	ing	Drawing:	H353	004-CX0	01-227-2	48-0001_0_V3
	CWP:	3804-CVR-023		CLIENT:	BAFFINI	LAND IR	ON MIN	IES, Baffin Island
	Origin:	1623-PLC-001		Destination:			23-XV-0	
Item	Description				Yes	No	N/A	Comments and Data
1		ed and marked correctly on both ends and transit	s		103	-/	11/7	Comments and Data
2	Cable size and	The state of the s			1	V		
3		or installed and connected			1			
4	Cable support	and enclosing systems satisfactory	17-50		1	- "		
5	Confirm prote	ctive measures (kick plates) are fitted correctly					1	
6		/ ties size and type / spacing correct			V			
7		/ formation to engineering Instruction		Triffel and the second	/			
8		s is within manufacturer's recommendations			V	V		
9		ion completed satisfactorily			V			
10		size correct and tightened satisfactorily			V			
11		ling washers have been fitted to gland, where required to the state of	uired		-		V	
12		y with area classification			1			
13 14	Bedding corre	shrouding correct	W. 18597.		1			
		ade up and terminated satisfactorily	100000	W-14-1111-	1			
15 16		mination completed according to procedure. Attac	ch senar	ate I.V.Cable	_ v			
10	100 Dec 100 De	rocedure sheet	on sepai	ate LV Cable			1	
17		mped and bolts tightened to correct torque rating			1			
18		ice verified/checked			1			
19	Check that the	earth bonding is correct and in accordance with t	the appr	oved project drawings	1			11,021(00)1123
	and specificat					Ü.		
20		e cables, ensure that the cables have been earther					1	
		of the approved project electrical drawings and sp	ecification	ons			V	
21		earth conductor / screen / sheath okay		The Part of the Pa	V			
22		ng / sheath earthed at both ends			V			
23		ne cable routing and segregation is correct			V			
24	identification is revision of dra		. Cable t	erminated to latest	1			
25		pare cores and screens have been earthed and co	onform t	o the requirements of			1	
		project drawings and specifications						
26		enclosure covers have been replaced and no bolt	ts are mi	ssing	V			
27		ed modifications			V			
28		rance of installation satisfactory			1		_	
29	ents: Cables red	ck on conductors satisfactory			V			
Comme	erts. Cables rec	quire cables			*			
		Trades Person		Supervisor			Field	Eng or QA/QC
Print N	lame:	Kris Krahl	/	Andrew Hamil	ton	Ne	20 ~	10ffett
n:		of ADCO	1	1/1 of ADC	- 17	0	M	
Date:		Aug 21 . 2019	11	Aug / 5 . 2019		17	-Co	-19



Tag No:	24	1623-PP-001B-C1	Project No:	3804 MEIP		P	
(Sub)	System:	1623-Effluent Pumping Station	Area:			Mine Site	
Des	cription: 2po	c16awg 300V TECK- Valve 2 Control/Monitoring	Drawing:	H3530	004-CX0	01-227-2	48-0001_0_V3
	CWP:	3804-CVR-023	CLIENT:	BAFFINL	AND IR	ON MIN	ES, Baffin Island
	Origin:	1623-PLC-001	Destination:		162	23-XV-00	01B
Item	Description		0-	Yes	No	N/A	Comments and Data
1		and marked correctly on both ends and transits	- Contraction of the Contraction	1.00	1		
2	Cable size and t		- diving	1		-	
3		installed and connected		1			
4		nd enclosing systems satisfactory		1			A CONTRACTOR OF THE CONTRACTOR
5		ve measures (kick plates) are fitted correctly				1	
6		ties size and type / spacing correct		1			
7		formation to engineering Instruction		1			
8	Bending radius i	s within manufacturer's recommendations	ROWNING COOKIE	/			
9	Cable installatio	n completed satisfactorily		/			
10	Cable glands siz	ze correct and tightened satisfactorily		/			0.805
11	Ensure IP sealing	ng washers have been fitted to gland, where require	ed			/	
12	Glands comply v	with area classification		\			
13	Lockouts and sh	rouding correct		/		A.	
14	Bedding correct		1101000	/			
15		le up and terminated satisfactorily		/			
16		ination completed according to procedure. Attach	separate LV Cable			1	
	Termination Pro					•	
17		ped and bolts tightened to correct torque rating	Walkerson a	V			
18		e verified/checked		V			
19	A contraction of the contraction	earth bonding is correct and in accordance with the	approved project drawings	1			
	and specification			1 2			
20		cables, ensure that the cables have been earthed i				1	
	A THE RESERVE AND A PROPERTY OF THE PARTY OF	the approved project electrical drawings and spec	ifications	— ,			
21		rth conductor / screen / sheath okay		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \			
22		g / sheath earthed at both ends		1			
23		cable routing and segregation is correct		V			
24	Check that, ther	e is no damage to the cores, termination chamber	layout is satisfactory, core	,			
1		correct and that crimped fittings are satisfactory. C	able terminated to latest	1			
	revision of draw		form to the requirements of				
25		are cores and screens have been earthed and con	form to the requirements of			V	
- 0.0		oject drawings and specifications nclosure covers have been replaced and no bolts	are missing	1			
26	No unauthorised		are missing	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \			
27		nnce of installation satisfactory	***************************************	- V	-		
28 29		k on conductors satisfactory	o so imposito	1./			
	ents: Cables requ			_ v			1975-0-1991
Comme	ints: Cables requ	ille Lables					
		Trades Person	Supervisor			Field	Eng or QA/QC
Print N	lame:	Kris Krahl	/ Andrew Hamil	ton	De	AAA	1 offett
gn:	1940/20	of ADCO	// of ADC	0	a.	my	10
Date:	2 - 2 - 50 1000 00 000	Aug 3 i , 2019	Aug / , 2019		17	L-Se	e-19



Tag No:	25	1623-FIT-001-C1	Project No:		dylay:	3804 ME	P
(Sub)System:	1623-Effluent Pumping Station	Area:			Mine Site	e
Des	scription:	1pc16awg 300V TECK- Flow transmitter control	Drawing:	H3530	004-CX0	01-227-2	48-0001_0_V3
	CWP:	3804-CVR-023	CLIENT:	BAFFINL	AND IR	ON MIN	ES, Baffin Island
	Origin:	1623-PLC-001	Destination:		16	23-FIT-(001
Item	Description	Y	A	Yes	No	N/A	Comments and Data
1		pered and marked correctly on both ends and transits			1		
2		and type correct		1			
3	Earth condu	uctor installed and connected		1			
4	Cable supp	ort and enclosing systems satisfactory		1			
5	Confirm pro	tective measures (kick plates) are fitted correctly				1	
6	Cable clam	ps / ties size and type / spacing correct		1			
7	Cable spac	ing / formation to engineering Instruction		/			
8	Bending rad	dius is within manufacturer's recommendations		/			SHRIMING THE RESERVE
9	Cable insta	llation completed satisfactorily		/			
10	Cable gland	s size correct and tightened satisfactorily		/			
11	Ensure IP s	ealing washers have been fitted to gland, where required				\	
12	Glands com	nply with area classification		/			
13	Lockouts ar	nd shrouding correct		/			
14	Bedding co	rrect		/			
15		made up and terminated satisfactorily					
16	LV Cables	Termination completed according to procedure. Attach sep-	arate LV Cable			1	
	Termination	Procedure sheet				V	
17	Cable lugs	crimped and bolts tightened to correct torque rating		V			
18		ence verified/checked	AST	/			
19		the earth bonding is correct and in accordance with the app	proved project drawings	1			
-	and specific						
20		ore cables, ensure that the cables have been earthed in ac		i i		1	
	The state of the s	ts of the approved project electrical drawings and specifica	tions	,			
21		of earth conductor / screen / sheath okay		V		,	
22		uring / sheath earthed at both ends		-		V	
23		t the cable routing and segregation is correct	1: " 1 1	V			
24		there is no damage to the cores, termination chamber layo	: 10 10 10 10 10 10 10 10 10 10 10 10 10	,			
	revision of	n is correct and that crimped fittings are satisfactory. Cable	terminated to latest	1			
- 25			to the requirements of	_			
25		at spare cores and screens have been earthed and conform ad project drawings and specifications	to the requirements of			V	
26		all enclosure covers have been replaced and no bolts are	miceina		-		
26		rised modifications	missing	- V			
27 28	The second second second second second	earance of installation satisfactory		1/			
29		check on conductors satisfactory		1	-		
		require Lables		_ V		With the state of	
Comme	iits. Cables	require cables					
		Trades Person	Supervisor			Field	Eng or QA/QC
Print N	lame:	Kris Krahl	Andrew Hami	lton	1		10ffe++
-		1/2			LU De	MA	//
in:		of ADCO	Aug 15, 2019	.0	12	-	10
Date:		Aug 3/ , 2019 //	Aug /5 , 2019		16	VJE A	# [T] *



Tag No:	26	1623-PIT-001-C1	Project No:			3804 MEI	P
(Sub)System:	1623-Effluent Pumping Station	Area:			Mine Site	
Des	scription:	1pc16awg 300V TECK- Pressure transmitter control	Drawing:	H353	004-CX0	01-227-2	48-0001_0_V3
	CWP:	3804-CVR-023	CLIENT:	BAFFINI	LAND IR	ON MIN	ES, Baffin Island
	Origin:	1623-PLC-001	Destination:		16	23-PIT-0	001
Item	Description	n		Yes	No	N/A	Comments and Data
1	Cable num	bered and marked correctly on both ends and transits			1		
2		and type correct		1	().		
3	Earth cond	uctor installed and connected		/			
4		port and enclosing systems satisfactory		/			
5	Confirm pr	otective measures (kick plates) are fitted correctly				V	
6	Cable clam	nps / ties size and type / spacing correct		/			
7		cing / formation to engineering Instruction		√			
8		dius is within manufacturer's recommendations		1			
9		allation completed satisfactorily		V,			
10		ds size correct and tightened satisfactorily		V		,	
11		sealing washers have been fitted to gland, where required		,		V	
12		mply with area classification		V .			
13		and shrouding correct		V,			
14	Bedding co	AND THE RESIDENCE OF THE PARTY		- V			C. III Committee on the committee of the
15		s made up and terminated satisfactorily	anda IV Cabla	V			
16		Termination completed according to procedure. Attach sep- n Procedure sheet	arate LV Cable			√	
17	Cable lugs	crimped and bolts tightened to correct torque rating		V			
18		uence verified/checked		/			
19	Check that and specifi	the earth bonding is correct and in accordance with the applications	proved project drawings	1			
20	On single	core cables, ensure that the cables have been earthed in ac	cordance with the			1	
(((((((((((((((((((requiremen	nts of the approved project electrical drawings and specifica	tions			V	
21	Continuity	of earth conductor / screen / sheath okay	and the same of th	V			
22	Cable arm	ouring / sheath earthed at both ends				/	
23	Confirm th	at the cable routing and segregation is correct		/			
24		t, there is no damage to the cores, termination chamber layer					- HOREIMAN HAVE IN THE STATE OF
		on is correct and that crimped fittings are satisfactory. Cable	terminated to latest	V			
	revision of						
25	255	at spare cores and screens have been earthed and conform	to the requirements of			1	\$
		ed project drawings and specifications		-			
26		all enclosure covers have been replaced and no bolts are	missing	1			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
27		orised modifications		- V	_		
28		pearance of installation satisfactory check on conductors satisfactory		- V			
29				V			
Comme	ents: Cables	require Lables					
1							
6							
		Trades Person	Supervisor			Field	Eng or QA/QC
Print N	lame:	Kris Krahl	Andrew Hamil	lton	D	241	Moffett
jn:		of ADCO	of ADC	:0	Q.	MH	M
Date:		Aug 3/ ,2019	Aug (5 , 2019		12	-Sep	-19



Tag No:	27		1623	-PIT-001-C2		Project No:	6,480		804 MEI	P
(Sub	System:		1623-Effluer	nt Pumping Station		Area:			Mine Site	
	real party									
Des	cription:	2c12awg	300V TECK- DO	Power to Pressure trans	mitter	Drawing:	H353	004-CX0	01-227-2	48-0001_0_V3
	CWP:		3804	4-CVR-023		CLIENT:	BAFFINL	AND IR	ON MIN	ES, Baffin Island
	Origin:		162	3-PLC-001		Destination:		16	23-PIT-0	001
Item	Descripti	ion					Yes	No	N/A	Comments and Data
1			d marked correc	tly on both ends and trans	sits			1		
2		ze and type		try off both crids and trains	, ito		1			
3		-	talled and conne	cted			1			
4	September 1		enclosing system			**Broker	1			
5				lates) are fitted correctly					V	
6			size and type / s		20 20 H		1			
7			nation to engine				1			
8				er's recommendations			1			
9	Cable ins	stallation co	ompleted satisfac	ctorily			\			
10	Cable gla	ands size c	orrect and tighte	ned satisfactorily			1			
11	Ensure II	P sealing w	ashers have bee	en fitted to gland, where re	equired	N market			_	
12	Glands o	comply with	area classification	on		TWEN	V			
13	Lockouts	and shrou	ding correct				/	2000		
14	Bedding	correct					V			
15			p and terminated				V			
16				ccording to procedure. Att	tach sepa	arate LV Cable			1	
		tion Proced					—			
17				ned to correct torque rating	g		V .			
18			erified/checked				V			
19		nat the earth cifications	n bonding is corr	ect and in accordance with	n the app	proved project drawings	1			
20		444	es, ensure that t	he cables have been earth	ned in ac	cordance with the			,	D PROBLEM
-0				ct electrical drawings and s					1	
21		Accessed to the second	conductor / scree		***		V			
22			heath earthed a				V			
23				egregation is correct			V			
24	Check th	nat, there is	no damage to the	ne cores, termination chan	nber layo	out is satisfactory, core				
35507.	identifica	ation is corr	ect and that crim	ped fittings are satisfactor	ry. Cable	terminated to latest	V			
		of drawing.								
25	Confirm	that spare	cores and scree	ns have been earthed and	conform	to the requirements of			1	
			ct drawings and							
26	Check th	nat all enclo	sure covers hav	e been replaced and no b	olts are r	missing	V			
27			odifications				1			
28			of installation s				V		-	
29			conductors sati	stactory			V			
Comme	ents: Cab	les require	Lables							
1										
1										
1										
	000		Tra	des Person		/ Supervisor		-	Field	Eng or QA/QC
Print N	lame:		110		_	Andrew Hamil	lton	0.	0.0	Moffott
S	vairie.	-	- 1/	Kris Krahl		/		D	WA !	100000
gn:		-	// (of ADCO	/	of ADC	.U	201	100	- 19
Date:			Aug	3 , 2019		Aug / , 2019		1 16	-500	-17



Tag No:	28	1623-JBX-001-C1	Project No:			3804 MEI	P
(Sub))System:	1623-Effluent Pumping Station	Area:			Mine Site	e
(Sub)	,5,500						
Des	cription:	2pc16awg 300V TECK- Level indicator Sensors	Drawing:	H3530	004-CX0	01-227-2	48-0001_0_V3
	CWP:	3804-CVR-023	CLIENT:	BAFFINL	AND IR	ON MIN	IES, Baffin Island
	Origin:	1623-PLC-001	Destination:	L	evel Sw	itch JBX	((L,H,HH)
Item	Description			Yes	No	N/A	Comments and Data
1		ed and marked correctly on both ends and transits			1		
2	Cable size and			1			
3		or installed and connected		V			
4	Cable support	and enclosing systems satisfactory		V			
5		ctive measures (kick plates) are fitted correctly			9	\	
6	Cable clamps	/ ties size and type / spacing correct		/			
7	Cable spacing	/ formation to engineering Instruction		/			
8	Bending radius	s is within manufacturer's recommendations		\	1		
9		ion completed satisfactorily		V			
10		size correct and tightened satisfactorily		V			
11		ling washers have been fitted to gland, where required				V	
12		y with area classification		V,			
13		shrouding correct	48900	V,		_	
14	Bedding corre						
15		ade up and terminated satisfactorily		V_		-	
16		rmination completed according to procedure. Attach se	parate LV Cable			1	
		rocedure sheet	1.74-1741	-	-	-	
17		mped and bolts tightened to correct torque rating	Water Water	1	8		
18		nce verified/checked	annound project drawings		-	 	
19	and specificat		70 MAY 1000	V	16		
20		e cables, ensure that the cables have been earthed in a			62	1	=24(6)
	requirements	of the approved project electrical drawings and specific	ations			•	
21	Continuity of e	earth conductor / screen / sheath okay		V			
22		ing / sheath earthed at both ends				V	
23		he cable routing and segregation is correct		V			
24	identification i	ere is no damage to the cores, termination chamber la s correct and that crimped fittings are satisfactory. Cab	yout is satisfactory, core le terminated to latest	1			
	revision of dra		m to the requirements of				
25		pare cores and screens have been earthed and confor project drawings and specifications	in to the requirements of			1	
- 00		enclosure covers have been replaced and no bolts are	missing	1		-	
26		sed modifications	illioonig	1/		1	
27		rance of installation satisfactory		1		1	
28		eck on conductors satisfactory		1			
Comme	ents: Cables re	quire Lables					
	- Complete	Trades Person	/ Supervisor			Field	Eng or QA/QC
Print N	Jame:	Kris Krahl	Andrew Ham	ilton	De		10ffett
gn:	TMITTEE	of ADCO	of AD		0.0	MIL	4
Date:		Aug 3/ , 2019	110		12	-Sel	0-19
Date.		Aug 31 , 2019	/ Aug (, 2019		1 6	1 - 1	



Tag No:	29	1623-H/S-001-P1	Project No:		3	804 MEI	P
)System:	1623-Effluent Pumping Station	Area:			Mine Site	
Jour	, system						
Des	cription: 2c12aw	g 1kV TECK- Horn Strobe notification Circ	uit Drawing:	H353	004-CX0	01-227-2	48-0001_0_V3
	CWP:	3804-CVR-023	CLIENT:	BAFFINI	AND IR	ON MIN	ES, Baffin Island
	Origin:	1623-PLC-001	Destination:		Hori	n/Strobe	e JBX
Item	Description	14-11-2		Yes	No	N/A	Comments and Data
1		d marked correctly on both ends and transits	S		1		
2	Cable size and type		1-11-11-11-11-11-11-11-11-11-11-11-11-1	1		- 1122	
3	Earth conductor inst	alled and connected		1			
4	Cable support and e	nclosing systems satisfactory		/			
5	Confirm protective n	neasures (kick plates) are fitted correctly				V	
6	Cable clamps / ties :	size and type / spacing correct		V			
7		nation to engineering Instruction		V			
8		thin manufacturer's recommendations		V	(
9		mpleted satisfactorily		V			
10		prrect and tightened satisfactorily		V		,	
11		ashers have been fitted to gland, where requ	uired			V	
12	Glands comply with			V,			
13	Lockouts and shrou	ding correct		V,			
14	Bedding correct			V/		_	
15		o and terminated satisfactorily	sh sanarata IV/Cabla	V	-		
16	Termination Procedu		ch separate LV Cable			V	
17		and bolts tightened to correct torque rating		1			
18	Phase sequence ve			V			
19	and specifications	bonding is correct and in accordance with	- CANAS - WA SEETH	ngs 🗸			
20		es, ensure that the cables have been earthe				1	
		approved project electrical drawings and sp	ecifications			N 100	
21		onductor / screen / sheath okay		V			
22	The state of the s	heath earthed at both ends		V .			
23		ole routing and segregation is correct				_	
24	Check that, there is	no damage to the cores, termination chamb	per layout is satisfactory, co	re /			
		ect and that crimped fittings are satisfactory	. Cable terminated to latest	√			
	revision of drawing.	and a second party bear and and a	anform to the requirements	of			
25		cores and screens have been earthed and c at drawings and specifications	conform to the requirements	01		1	
		sure covers have been replaced and no bol	te are missing	- /	<u> </u>	-	
26	No unauthorised mo		to are missing	1		1	
27 28		of installation satisfactory		1		•	
29		conductors satisfactory		1			
	ents: Cables require		# AMARINE			-	
Commi	ints. Cables require						
1							
					_		
		Trades Person	Supervisor			Field	Eng or QA/QC
Print N	lame:	Kris Krahl	Andrew H	lamilton	De	91 ~	1offet+
gn:		6 of ADCO	/// of	ADCO	Q. 1	Max	h
Date:		Aug 3/ , 2019	Aug (, 20	19	12-	Jep.	- 19



CTS-70-020 Electrical Motor

Constuction Test Sheet CTS-70-020 Electrical Motor



Tag No:	3	1623-PP-001A	Project No:	Training to		3804 ME	IP
(Sub)	System:	1623-Effluent Pumping Station	Area:			Mine Sit	e
Des	cription:	10 HP 3P/600V Motor/Pump Assembly	Drawing:	H3530	004-CX0	01-227-2	248-0001_0_V3
	CWP:	3804-CVR-023	CLIENT:	BAFFINL	AND IR	ON MIN	IES, Baffin Island
Item	Description		5.	Yes	No	N/A	Comments and Data
1	Verify equipr	nent details correct against drawings/ datasheet.				1	Owner SUPPAI
2	Verify vendo	r's certification documents complete and available.		x =		V	Dur Soll
3	Verify earthir	ng is correct and conforms to design specification.					"
4	Measure eat	h bar resistance to general earth. (Max Value= 0.5ohm)		V	0.000.000.000		
5	Verify incom	ing feeder cables are complete, tight and correct phasin	g.	1/			
6	Verify tappin	g connections are correct.					
7	Verify padloc	king facilities on doors and tap selector switches.				1	
8	Check air ve	ntilation systems are available and free from obstruction	ľ	/			288783
9	Verify satisfa	ictory operation of winding temperature monitoring syste	em.	V			
10	Verify operat	ion of auxiliary devices		2	S-1000/E-7/	V	
11	Verify satisfa	ctory dielectric tests of insulating medium.			100	V	

Comments:

	Trades Person		Supervisor	Field Eng or QA/QC
Print Name:	Kris Krahl		Andrew Hamilton	Dean Moffett
in:	of ADCO	//	of ADCO	Q. Mast
Date:	Aug 3/ , 2019	///	Aug / , 2019	12-500-19

Constuction Test Sheet CTS-70-020 Electrical Motor



4	1623-PP-001B	Project No:			3804 ME	IP	
System:	1623-Effluent Pumping Station	Area:	Mine Site				
cription:	10 HP 3P/600V Motor/Pump Assembly	Drawing:	H353004-CX001-227-248-0001 0 V3				
CWP:	3804-CVR-023	CLIENT:	BAFFINLAND IRON MINES, Baffin Isl			NES, Baffin Island	
Description		1/100000	Yes No N/A Comments				
Verify equipm	nent details correct against drawings/ datasheet.			-	V	Owner Supply	
Verify vendor	r's certification documents complete and available.					Owner Spal	
Verify earthir	ng is correct and conforms to design specification.	100000000000000000000000000000000000000	V			111/	
Measure eat	h bar resistance to general earth. (Max Value= 0.5ohm	n)	/				
Verify incomi	ing feeder cables are complete, tight and correct phasi	ing.	V	April 1990			
Verify tapping	g connections are correct.						
Verify padloc	king facilities on doors and tap selector switches.	,,, <u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>			1/		
Check air ver	ntilation systems are available and free from obstruction	on					
Verify satisfa	ctory operation of winding temperature monitoring sys	tem.	V	in the second			
Verify operat	ion of auxiliary devices				V		
Verify satisfa	ctory dielectric tests of insulating medium.		7 2270		/		
	CWP: Description: Verify equipr Verify vendo Verify earthir Measure eat Verify incom Verify tappin Verify padloc Check air ve Verify satisfa Verify operat	System: 1623-Effluent Pumping Station Cription: 10 HP 3P/600V Motor/Pump Assembly CWP: 3804-CVR-023 Description Verify equipment details correct against drawings/ datasheet. Verify vendor's certification documents complete and available. Verify earthing is correct and conforms to design specification. Measure eath bar resistance to general earth. (Max Value= 0.5ohm Verify incoming feeder cables are complete, tight and correct phas Verify tapping connections are correct. Verify padlocking facilities on doors and tap selector switches. Check air ventilation systems are available and free from obstruction.	System: 1623-Effluent Pumping Station Area: Cription: 10 HP 3P/600V Motor/Pump Assembly Drawing: CWP: 3804-CVR-023 CLIENT: Description Verify equipment details correct against drawings/ datasheet. Verify vendor's certification documents complete and available. Verify earthing is correct and conforms to design specification. Measure eath bar resistance to general earth. (Max Value= 0.5ohm) Verify incoming feeder cables are complete, tight and correct phasing. Verify tapping connections are correct. Verify padlocking facilities on doors and tap selector switches. Check air ventilation systems are available and free from obstruction Verify satisfactory operation of winding temperature monitoring system. Verify operation of auxiliary devices	System: 1623-Effluent Pumping Station Area: Cription: 10 HP 3P/600V Motor/Pump Assembly Drawing: H353C CWP: 3804-CVR-023 CLIENT: BAFFINL Description Yes Verify equipment details correct against drawings/ datasheet. Verify endor's certification documents complete and available. Verify earthing is correct and conforms to design specification. Measure eath bar resistance to general earth. (Max Value= 0.5ohm) Verify incoming feeder cables are complete, tight and correct phasing. Verify tapping connections are correct. Verify padlocking facilities on doors and tap selector switches. Check air ventilation systems are available and free from obstruction Verify satisfactory operation of winding temperature monitoring system. Verify operation of auxiliary devices	System: 1623-Effluent Pumping Station	System: 1623-Effluent Pumping Station Area: Mine Site Cription: 10 HP 3P/600V Motor/Pump Assembly Drawing: H353004-CX001-227-2009: 3804-CVR-023 CLIENT: BAFFINLAND IRON MINE Description Yes No N/A Verify equipment details correct against drawings/ datasheet. Verify equipment details correct against drawings/ datasheet. Verify vendor's certification documents complete and available. Verify earthing is correct and conforms to design specification. Measure eath bar resistance to general earth. (Max Value= 0.5ohm) Verify incoming feeder cables are complete, tight and correct phasing. Verify tapping connections are correct. Verify padlocking facilities on doors and tap selector switches. Check air ventilation systems are available and free from obstruction Verify satisfactory operation of winding temperature monitoring system.	

	Trades Person	Supervisor	Field Eng or QA/QC
Print Name:	Kris Krahl	// Andrew Hamilton	Dean Moffett
jn:	of ADCO	Mylly of ADCO	Q. make
Date:	Aug 3/ , 2019	/// Aug / , 2019	12-Sep-19



PIS-50-012 Pump Installation

Constuction Test Sheet PIS-50-012 Pump Installation





Tag No:	3	1623-PP-001A	Project No:			3804 MEI	P		
(Sub)	system: 1623-Effluent Pumping Station Area:				Mine Site				
Des	cription:	10 HP 3P/600V Motor/Pump Assembly	Drawing:	H353004-CX001-227-248-0001_0_V3					
	CWP:	3804-CVR-023	CLIENT:	BAFFINLAND IRON MINES, Baffin			ES, Baffin Island		
Item	Description			Yes	No	N/A	Comments and Data		
1	Construction	& Installation checked against specifications & design	n drawings.	V					
2	Location & O	verall dimensions correct		V					
3	Foundation c	omplete and anchor bolts set		V					
4	Unit assembl	ed per manufactures instructions		V					
5	Materials of c	construction as per specification and drawings		V					
6	Labeling/Iden	ntification			1/				
7	Coating comp	pleted to specification				1/			
8	Overall aesth	etics acceptable				Manager Committee Committe			
9	Driver Installe	ed			V				
10	Anchor bolts	torqued	V			1 3130000			
11	Centerline loc	cation & Elevation checked	V						
12	Cold alignme	nt complete				1			
13	Ratation ched	cked and record complete		1/					
14	Packing / sea	al installed	NAME OF THE PARTY			V	Mary and the state of the state		
15	Coupling gua	rd installed		38		1			
16	Pipe connect	ion stresses removed & checked		1/					
17	Lube system	complete				1	West Constitution and the Constitution of the		
18	Manufacturer	test data complete				1/			
19	For Reciproca	ating Pumps					Was a service of the		
20	Seals packing	gs tight				V			
21	Flow dampen	ners on line		10		~			
22	Configuration	established				1			
23	Stroke adjust	er to Zero				V			
24	Level in sucti	on vessel established				V			
25	Seal Type:					V			
Comme	nts: Eq.	aipment cabel to be install	.)				- B 44-9		

	Trades Person	// Supervisor	Field Eng or QA/QC
Print Name:	Kris Krahl	Andrew Hamilton	Dean Moffett
şn:	S of ADCO	//// of ADCO	Q. Moke
Date:	Aug 3/ , 2019	Aug (\$, 2019	12-Sep-19

Constuction Test Sheet PIS-50-012 Pump Installation



Tag No	ag No: 4 1623-PP-001B Project No			3804 MEIP				
(Sub	(Sub)System: 1623-Effluent Pumping Station Are		Area:	Mine Site				
Des			Drawing:					
000		10 HP 3P/600V Motor/Pump Assembly	LI CALLES TO SERVICE	H353004-CX001-227-248-0001_0_V3				
	CWP: 3804-CVR-023 CLIENT:			BAFFINLAND IRON MINES, Baffin Island				
Item	Description			Yes	No	N/A	Comments and Data	
1	Construction	& Installation checked against specifications & design						
2	Location & O	verall dimensions correct		V			1918	
3	Foundation co	omplete and anchor bolts set		V				
4	Unit assemble	ed per manufactures instructions		0				
5	Materials of c	onstruction as per specification and drawings		1/				
6	Labeling/Iden	tification	(Auto-2014)		1/			
7	Coating comp	pleted to specification				V		
8	Overall aesth	etics acceptable		1/			7,448.00	
9	Driver Installe	ed			1/			
10	Anchor bolts	torqued	V					
11	Centerline loc	ation & Elevation checked		1/				
12	Cold alignmen			V				
13	Ratation chec	ked and record complete		1/				
14	Packing / sea	l installed				V		
15	Coupling guar	rd installed				1/		
16	Pipe connecti	on stresses removed & checked	- AMM	1				
17	Lube system	complete				V	1000	
18	Manufacturer	test data complete				V		
19	For Reciproca	ating Pumps			******	1	,	
20	Seals packing	gs tight	774474				11-57H-11-11-11-11-11-11-11-11-11-11-11-11-11	
21	Flow dampen	ers on line	Market Committee			/		
22	Configuration	established				V		
23	Stroke adjuste	er to Zero	THE PERSON AND ADDRESS OF THE PERSON ADDRESS OF THE PERSON AND ADDRESS OF THE PERSON ADDRESS OF THE PERSON ADDRESS OF THE PERSON ADDRESS OF THE PERSON AND ADDRESS OF THE PERSON ADDRESS OF THE PERSON A			1/		
24	Level in suction	on vessel established				V		
25	Seal Type:	5 3 3 1 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5				-		
Comme	ents: Equ	ipment label to be instell	ed				300000000000000000000000000000000000000	

	Trades Person		// Supervisor	Field Eng or QA/QC
Print Name:	Kris Krahl		/ Andrew Hamilton	Dean Moffett
n:	of ADCO	10	M of ADCO	A muse
Date:	Aug 3/ , 2019	/ (/	Aug / , 2019	12.500-19



PIS-70-021 UPS System Startup

Construction Inspection Sheet PIS-70-021 UPS System Startup





Tag No:	No: 12 1623-PLC-UPS-001 Project No:				3804 MEIP					
(Sub)System: 1623-Effluent Pumping Station Area:		Area:	Mine Site							
Desc	cription:	GTK Supplied UPS in Custom Pump Controler	Drawing:	H353004-CX001-227-248-0001_0_V3						
	CWP:	3804-CVR-023	CLIENT:	BAFFINLAND IRON MINES, Baffin Island						
Item	Description			Yes	No	N/A	Comments and Data			
1	Check for no	voltage and that feeder is isolated and locked off	F-1							
2	Check that a	all internals are clean and clear from dust and debris								
3	Check that v	rentilation air inlet, (bottom), and outlet, (top), cubicles	are free from obstructions			1/				
4	Check prote	ctive devices correc rating, (fuses and MCBs)		V						
5		re-energisation checks complete and sheets attached				/				
	contact man	TELL TING TO SOLVE THE TO								
7	Energization	notice (EN) obtained								
8	Warning not	ice located at inverter				V				
9		ning DC supply at inverter and switch ON			/	V				
10		ter (AC) output		V						
		itch and check for (AC) output voltage	- Control	V			Management of the second of th			
		pass supply to static switch and check	NAME OF A STATE OF A S			V				
	The state of the s	d verify satisfactory operation of anti-condensation hea	OLIGINATION WATERWAY			/				
		der cubicle and function check controls and DCS inter								
		arger cubicles and check for correct phase rotation and	the state of the s			1				
		e ground loop impedance test at charger panels (Max v				1				
_		eck charger system in accordance with manufacturer's		-						
18	With the inverter on load, test the load transfer from charger/inverter to bypass (static bypass switch)									
10	With the inverter on load, test the load transfer from charger/inverter to bypass (manual bypass switch)									
20	With the inverter on load, test the load transfer from charger/inverter to battery/inverter									
21	Check the in	verter remote alarm - UPS unit failure				V				
22	Check the in	verter remote alarm - fuse blown/ground fault rectifier/s	SBS/battery			V				
23	Check the in	verter remote alarm - fuse blown/ground fault distribution	on			V				
24		tion of all indicator LEDs, controls, display selectors ar	nd local alarms			V				
		eration and settings of alarms and trips		/		V				
		actory charging parameters		V	/					
		actory discharge parameters (Record test results)								
28		tisfactory operation of the UPS Inverter circuits		V						
		er instrumentation functioning correctly				V				
		over for live parts replaced								
Comme	nts: $\mathcal{N}_{\bar{e}}$	load Test Completed.								
		Trades Person	Supervisor			Field E	ing or QA/QC			
Print Na	ame:	Kris Krahl Andrew Hamil		on	Dean Moffett					
<u>;n:</u>		of ADCO	of ADC)	Q. Mahr					
Date:		Aug 3/ , 2019	Aug 15 , 2019		12-	Sep-	19			
		No.								



CIS-70-033 Electrical Junction Boxes

Construction Inspection Sheet CTS-70-033 Electrial Junction Boxes



Tag No:	13	1623-JI	3X-001	AND DE TO	Project No:	No: 3804 MEIP					
(Sub)	System:	1623-Effluent P	umping Station		Area:		Mine Site				
Des	cription:	Level Indicato	or Switch JBX		Drawing:	H3530	004-CX0	01-227-2	48-0001_0_V3		
	CWP:	3804-C	VR-023		CLIENT:		AFFINLAND IRON MINES, Baffin Island				
Item	Description	T. O. C.				Yes	No	N/A	Comments and Data		
1	General Data										
2											
3	Specification										
4		Number of junction box:					/				
5	Confirm Ex la						V				
6	Record Ex-Certificate No. (if applicable):							V			
7	Inspection										
8		t junction box installed ac		and area class	sification.	V					
9		mbering / ferruling correc					/				
10		mechanically sound, solid		unted.		V					
11		of cable glands and gland	s tightened.	- 10		/					
12	Earthing / bon	iding / shrouding correct.				/					
13	Terminations	correct.	1900								
14	Spare holes p	lugged (i.e. unused cable	entries).								
15	All nuts, bolts	and washers in place and	d secure.								
16											
17	Gaskets in place and correct.										
18	Cables correctly cleated.										
19	Terminal blocks are correct type, mechanically sound, mounted and segrated correctly.										
20	Junction box located correctly to allow easy access for maintenance.										
21	Mounting rail for PE-Terminals is made of copper (Cu).										
22	Drain plug ins			/							
23	Tag No. Visib			V							
24	Check correct	thermostat installed acco	ording to drawing an	d area classif	fication.			1/			
25	Thermostat m	echanically sound, solidy	and correctly moun	nted.				./			
26	Capillary insta	illed correctly and mecha-	nically sound.			- 1/2000 Est		1/			
27	CE mark in pl	ace.				/					
28	Insulation Res	sistance of current carryin	g components teste	ed.				1/			
y y	Instrument us			299 0.41	TO PARTIE AND ADDRESS OF THE PARTIES AND ADDRESS	- de consessad					
	Calibration da	te:	1000	110000	98692/						
	Voltage:							The second second			
	Duration:	719-010-1									
	Phase 1 to ph	ase 2:									
	Phase 2 to ph	nase 3:						-	***		
	Phase 1 to ph	ase 3:		5-1111-00-11							
	Phase 1 to Gr	ound:		7777	I MCCC				-		
Comme	nts:										
	- 2 10111 0.34411	Trades I	Person	1	Supervisor			Field E	ing or QA/QC		
Print Na	ame:	1/	Kris Krahl		Andrew Ha	milton	De	an M	offett		
3n:		15	of ADCO	/h	√ of A	DCO	0	My	CF		
Date:		Aug 3	, 2019	Aug 5, 2019 12-5c-19			219				



CIS-75-029 Beacons, Sirens, Horns

Pre-Operational Inspection Sheet CIS-75-029 Beacons, Sirens Horn



)System:	MODULE HORN/ STROBE 1623-Effluent Pumping Station	Project No: Area: Drawing:		3804 MEIP Mine Site			
Des		uilding Horn & Strobes Mounted on Effluent Seaca					48-0001_0_V3	
	CWP:	3804-CVR-023	CLIENT:	BAFFIN	LAND IF	ON MIN	IES, Baffin Island	
Item	Description		- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	Yes	No	N/A	Comments and Data	
1	Manufacturer:							
2	Model:							
3	Serial No:	a may make the second s						
4	Visual Inspection							
5	Installed in correct							
6 Comme		al infection of Horn Alan conditions on	University of the Control of the Con				=:racr	
	Tarana and	Trades Person	A Supervisor	AND DESCRIPTION OF THE PARTY OF	Field Eng or QA/Q			
Print N	lame:	Kris Krahl	Andrew Hai	milton	1		offett	
ˈʒn:		1//	1		M	A4 -	11	
-		of ADCO		DCO	Q	100	ph.	
Date:	1	Aug %/ , 2019	Aug 1 . 2019	6		1	a 1 01	



SECTION 4: ITP CLOSEOUT

- PIS-70-999 Construction Work Package Punch List
- Final Walkdown Punch List
- PIS-10-001 As Builts
- Certificate of Construction Completion
- Care and Custody Certificate
- Declaration of Completion
- Turnover Package Review of Completion



PIS-70-999 Construction Work Package Punch List

Pre-Operational Report Sheet PIS-70-999 Construction Work Package Punch List



Tag No:		Project No:		804 MEIP	
(Sub)System:	1623-Effluent Pumping Station	Area:		Mine Site	
Description:		Drawing:	H353004-CX00	01-227-248-0001	_0_V3
CWP:		CLIENT:	BAFFINLAND IR	ON MINES, Baff	in Island
CHECK SHEET/ LOCATION/ ITEM	DEFECTS/INCOMPLETES TO	D BE REINSPECTED		REINSPECTED BY ADCO	REINSPECTED BY HATCH
Electrical pg 24, 25	two motorized value hand Permanent lamacoids on e	les to be	replaced		
	Permanent lamacoids on e	lectrical equip	ement		
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		0.000	W		
	, , , , , , , , , , , , , , , , , , , ,				
		- Williams	-		
	Trades Person	Supervisor	1	Field Eng or C	A/QC
Print Name:)	yle Krahl	Der	ele tadla	Lushi
rign:		C/Y			2/2
Jate:	L N	100 15 2019		Na	18/19



Final Walkdown Punch List

Baffinland Mary River Punch List Input Form **†**Baffinland Project No.: H353004 Punch List ID. CX001 Date: 13 Sep / 2019 Contract Number **Document No** mmm уууу Area Inspected Treated Effluent Pumping Station & Pipeline Area No. Package System Subsystem Description Inspected By **Andrew Hamilton** Dean Moffett For Contractor For EPCM Priority Туре Cause Discipline Complete before Pre-Operational Testing Equipment problems 10 Civil Equipment Performance 2 Complete before Commissioning Design inadequate 50 Mechanical 60 Piping General Installation 3 Complete before Operation Installation incorrect Documentation 4 Complete before Sustained Production Work remaining 70 Electrical 5 Complete before Final Performance Acceptance 75 Instrumentation This defects list in no way relieves the contractor of any Contractual obligations in terms of the Contract should any deficiency in terms of the Employer's requirements be omitted from this listing. Participants: Dean Moffett Hatch Andrew Blackburn BIM Andrew Hamilton Nuna/Adco Christopher Kilos Horizon North

Comments:

Baffinland Mary River Punch List Inpu. Form Project No.: H353004



Punch Lis	t ID.	CX001							0		Date:	13	1	SEP	I	2019				
		Contract Number				Document No						dd		mmm	y	уу				
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Alea Ilisp	ecteu	Area No.	<i>y</i>	Package		System	'		Subsystem		scription	ent i ump	ing Otal	ion or i	Jenne				¥9	
	D			Package		System			Subsystem		The state of the s									
Inspected	Ву	Andrew Hamilton									ean Moffet				-				£	
		For Contractor								Fo	or EPCM									_
		Туре						F	Priority				a A Tollio E	Cause	C41X4			Discipline		1
	Α	Safety				Complete before						G		nt problem:			10	Civil		
	B C	Equipment Performance General Installation				Complete before Complete before))			H		nadequate on incorrect			50 60	Mechanical Piping		1
	D	Documentation				Complete before			luction			K	Work res				70	Electrical		1
					5	Complete before	e Final Per	rforman	nce Acceptance			L	Addition	al item			75	Instrumentation]
		This defects list in no way	relieves	the contractor of	any C	ontractual obliq	gations in	terms	of the Contract s	hould any	y deficiency in	terms of the	Employe	r's require	ments be o	mitted fron	n this listi	ng.		
Item No.	Lin	ne / Equip ID Tag No).		Re	medial Wo	rk Des	cripti	ion		RespID	Action	T	P	С	D		Due Date	Closed by Contractor	Approved by Hatch
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1		Pumphouse				Permanent C	Cable 1	aggin	ng 		ADCO	ADCO					2	019-09-16	1700-	Novana
2		Pumphouse			P	Permanent \	∕alve Ta	aggin	g		ADCO	ADCO					2	019-09-27		
3		Pumphouse			E	Equipment A	sset Ta	aggin	g		ADCO	ADCO					2	019-09-27		
4		Pumphouse		Replace	brok	en handles	on the	2 mo	otorized valves		ADCO	ADCO					2	019-09-27		

Baffinland Mary River Punch List Inpu. Form Project No.: H353004



Punch Lis	t ID.	CX001							0	Date:	13	- 1		SEP	1	2019	9			
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Area Insp	ected	7	1 .	0	- 1	0	/		0	Treated Efflu	ent Pump	ing S	statio	on & Pip	eline				_	
		Area No.		Package		System		s	ubsystem	Description										
Inspected	Ву	Andrew Hamilton								Dean Moffe	tt									
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1	C	General Installation		A - 2015 A - 1	3						J			incorrect			60	Piping		1
	D	Documentation			4	LANGUAGE CONTRACTOR					K			aining			70	Electrical		1
			- Contract Contract		5						L		tional				75	Instrumentation]
		This defects list in no way r	elleves	the contractor of	any (Contractual obliga	tions in	terms o	of the Contract shoul	any deficiency in	terms of the	Emple	oyer's	s requiren	nents be o	mitted fror	n this listi	ng.	No.	
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5		Pumphouse	- 1	mstan tank it	SVEI			oper	ator carr provide	ADCO	ADCO		- 1				2	019-09-27		
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		8		Install hard	sur	face to cover	rigid fo	oam ir	sulation under				- 1							1.0
6		Pumphouse				pipir				NUNA	NUNA		- 1				2	019-09-20		0/11/19
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Baffinland ____

Mary River Punch List Input Form Project No.: H353004



Punch Lis	st ID.	CX001					0	Date:	13	1	SEF	1	18	2019				
		Contract Number		Do	cument No				dd	1	mmm	-	уууу					
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Area Insp	ectea		0	_ '	0	_ ′ .	0	Treated Efflu	uent Pump	ing Sta	tion & F	ipeline						
		Area No.	Package		System		Subsystem	Description										
nspected	Ву	Andrew Hamilton						Dean Moffe	tt									
		For Contractor						For EPCM	0.84								2 .	
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- 1	A	Type Safety		11.00	implete before f	Ore Opera	Priority		-	1 6	Cause					Discipline		1
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[D	Documentation			omplete before \$			1900	K		maining	-			70	Electrical		1
1							ormance Acceptance		L	Addition			- 3270		75	Instrumentation		1
		This defects list in no way relie	eves the contractor of	any Cont	tractual obliga	tions in te	erms of the Contract shou	ld any deficiency ir	n terms of the	Employe	r's requir	ements b	e omit	ted from	this listin	ng.		
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9		Pumphouse	Complete in	terior fir	nishing for	addition	n to seacan (plywood					1		- 1	020		1	8230
9		Fumphouse			and pa			HATCH	NUNA		1			- 1	2	019-09-16	1111	10
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11		Pumphouse	Install "Wate	ch your s	step" and "	Authori	ized Personnel Only'	HATCH		1	1	1				240 00 40		
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12		Pumphouse	Turnove	er docur	mentation p	ackage	e to be uploaded	HATCH	ADCO		1	1		1	20	019-09-20		
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13		Pipeline						HATCH	ADCO			1	- 1	- 1	(Complete	АНМ	DM
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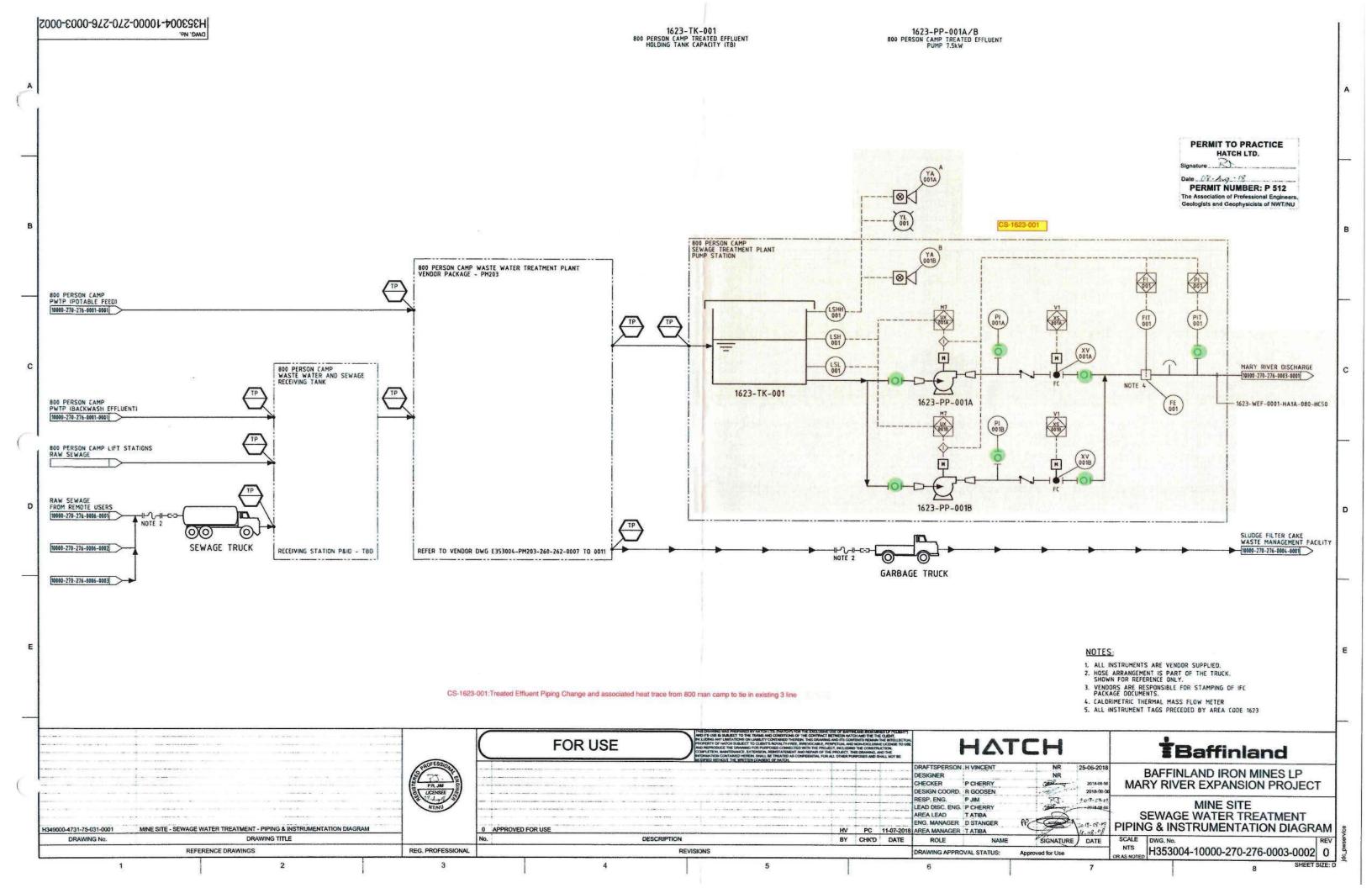
Baffinland Mary River Punch List Input Form Project No.: H353004

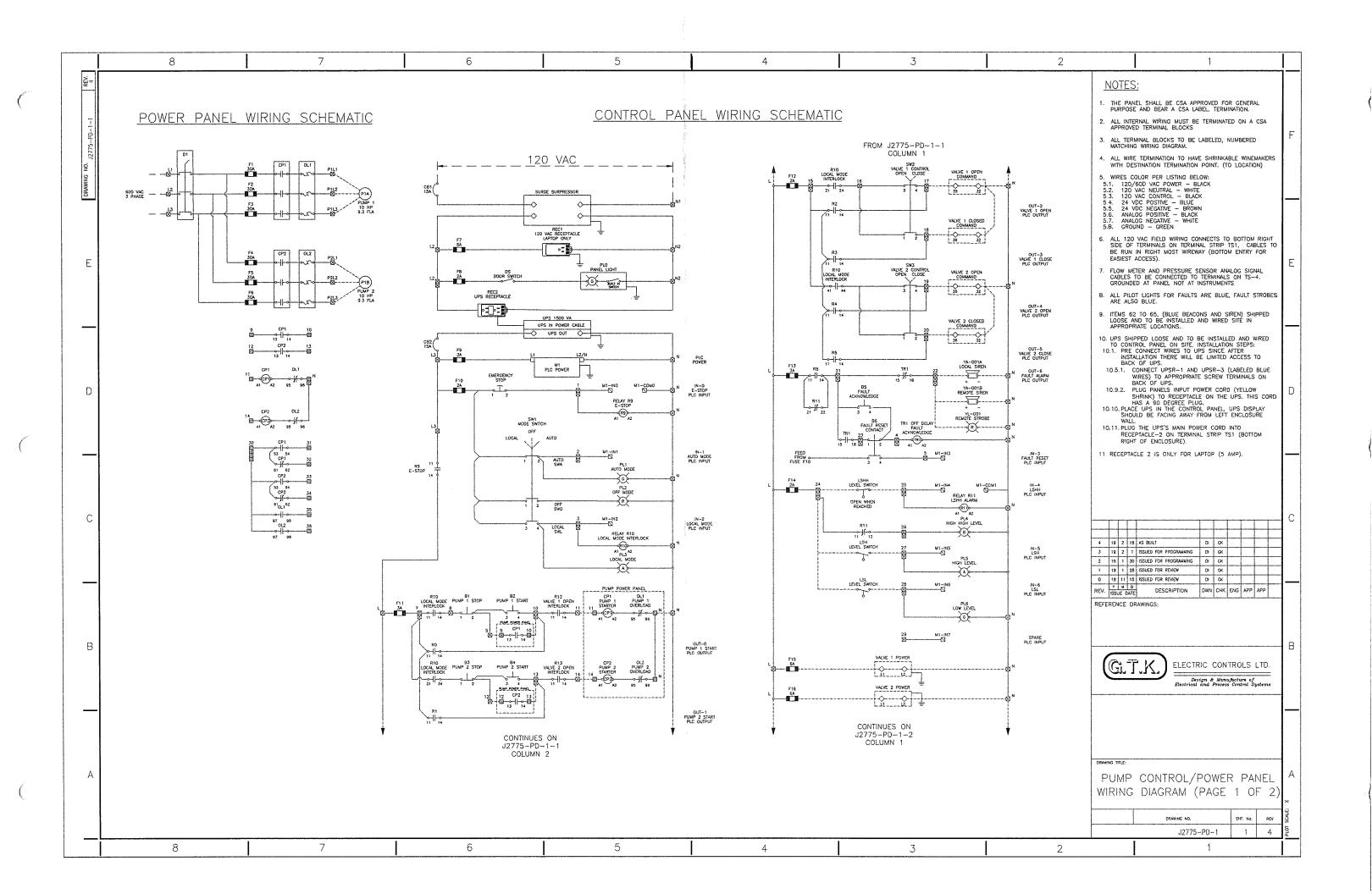


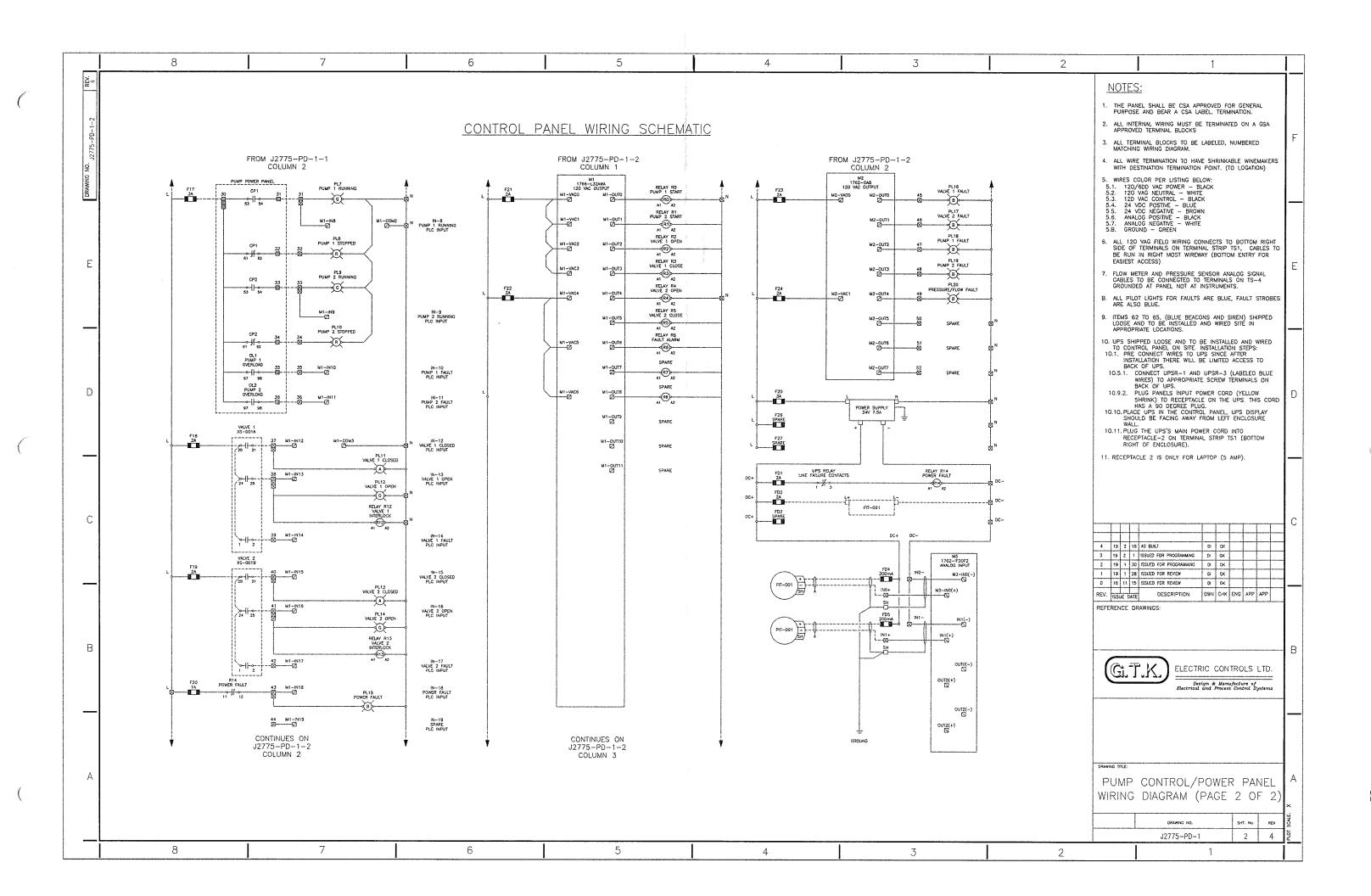
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Area Inspe	cted		1	0	1	0	1	0	Treated Effl	uent Pump	ing Stat	ion & Pip	peline					
		Area No.		Package		System	- 22	Subsystem	Description								_	
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		This defects list in no way	relieve	s the contractor of	arry Cor	itractual oblig	ations in t	terms of the Contract should	any deficiency i	n terms of the	Employe	's requirer	nents be o	mitted fror	n this list	ng.		
Item No.	No. Line / Equip ID Tag No. Remedial Work Description		ription	RespID	Action	Т	Р	С	D		Due Date	Closed by Contractor	Approved by Hatch					
14		Pipeline			Valve tags missing in valve box		натсн	ADCO					2019-09-27			1832		
15		Pipeline			Insulati	on require	d on val	lve box lid	натсн	ADCO						Complete	АНМ	DM
16		Pipeline		Insulation	requir	ed on pipi	ng and v	valves in valve box	НАТСН	ADCO					2	019-09-13	axo.	RL
17		Pipeline		L	abels r	equired on	Heat T	race JBX's	натсн	ADCO		45.555			2	019-09-27	40	RL
18		Pipeline	- 82	HDPE Ins		Kits requir		eat Trace Cold-Hot aces)	натсн	ADCO					75	Complete	АНМ	DM
19		Pipeline		Reposition H		ne just Nor t piping out		nulsion access road to point.	НАТСН	ADCO					2	019-09-20		
20		Pipeline						E line 150m South of atural trench	натсн	ADCO					33	Complete	AHM	DM
21		Pipeline		25.74				E line 100m South of atural trench	натсн	ADCO					9)	Complete	AHM	DM
22		Pipeline						Nuna access rd with SS bands	натсн	ADCO					9	Complete	АНМ	DM
23		Pipeline		Installation		ble Tray ur		PE line behind boot	НАТСН	ADCO					2	019-09-20		

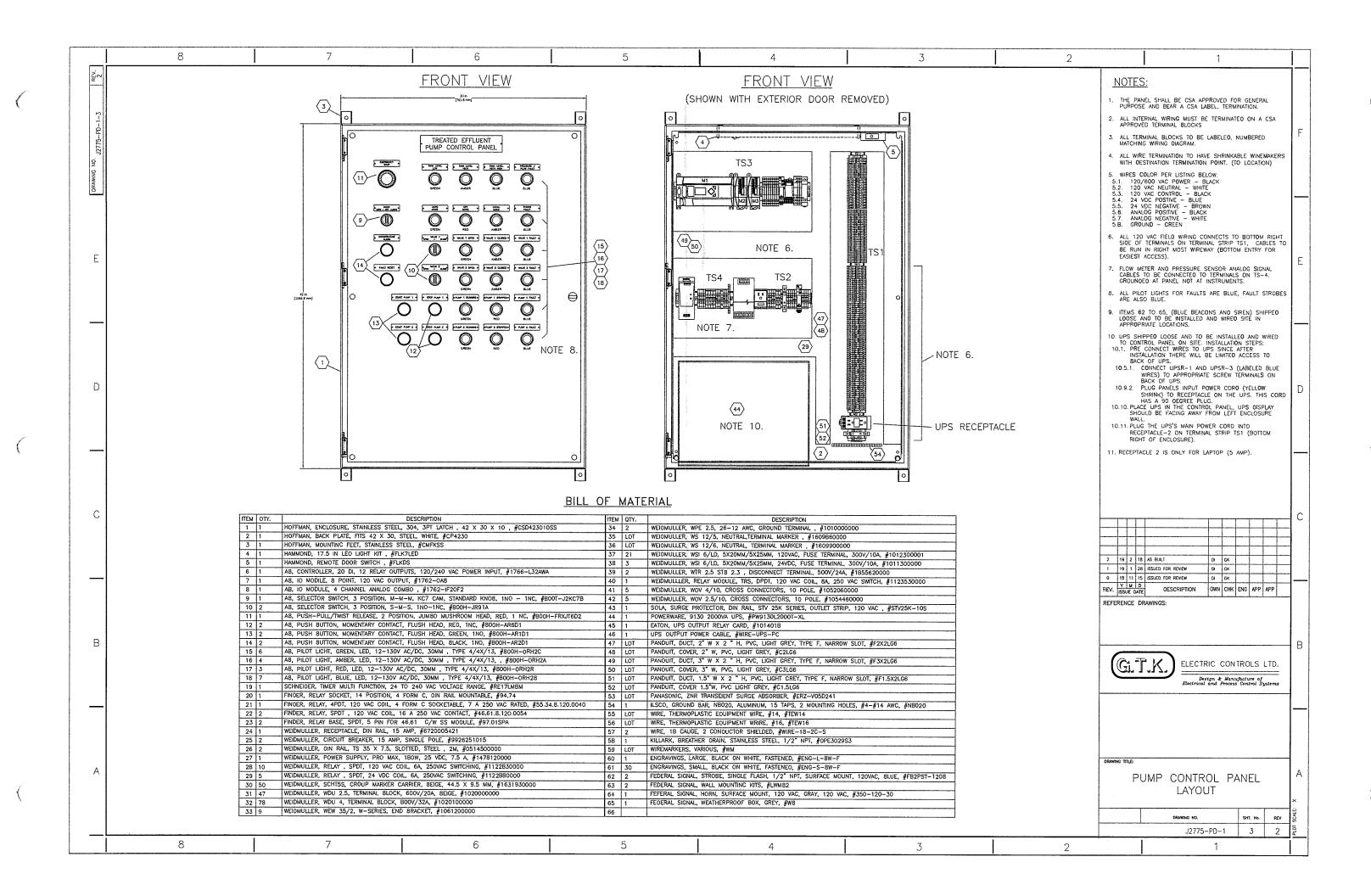


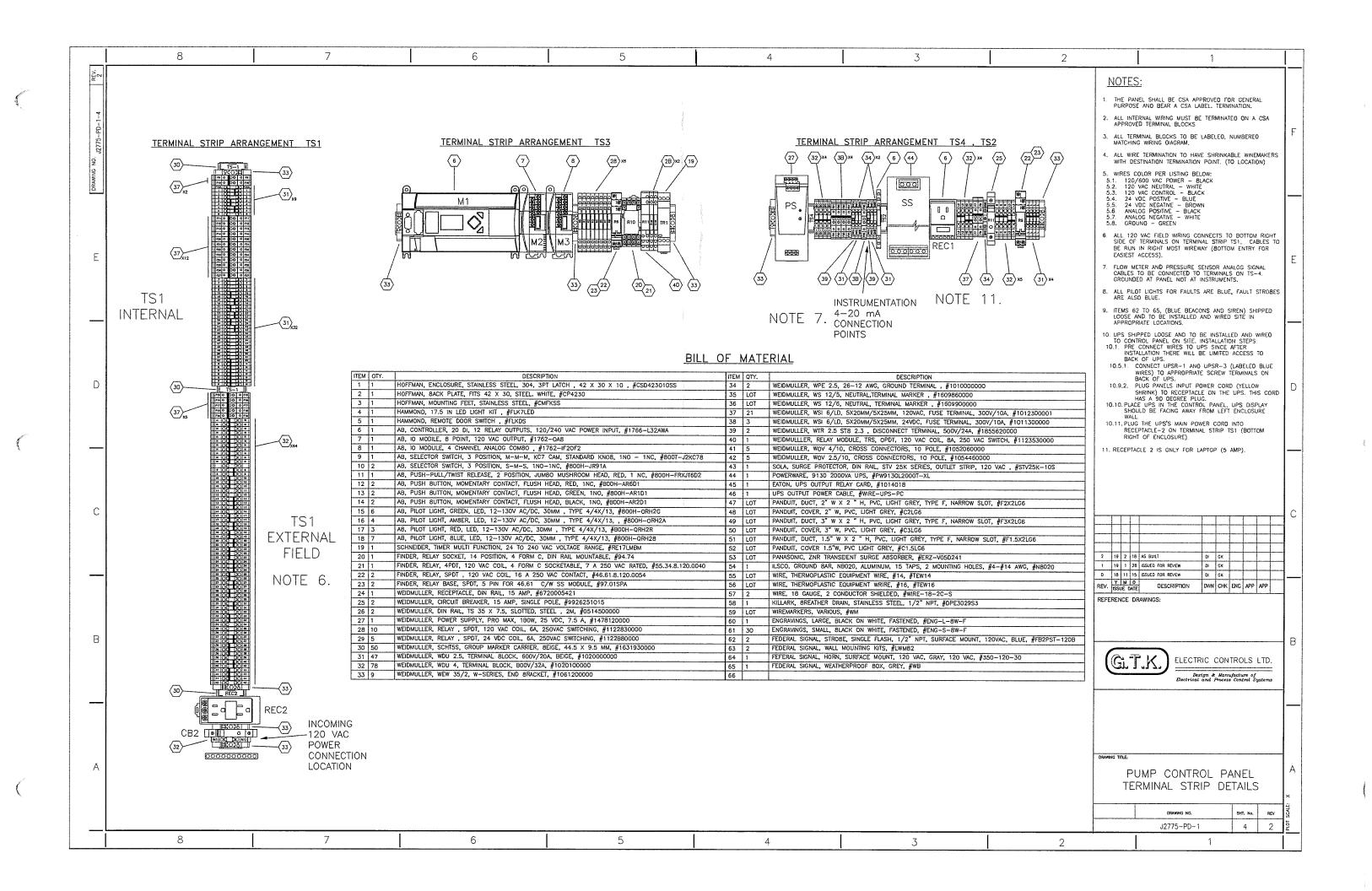
PIS 10-001 As Builts

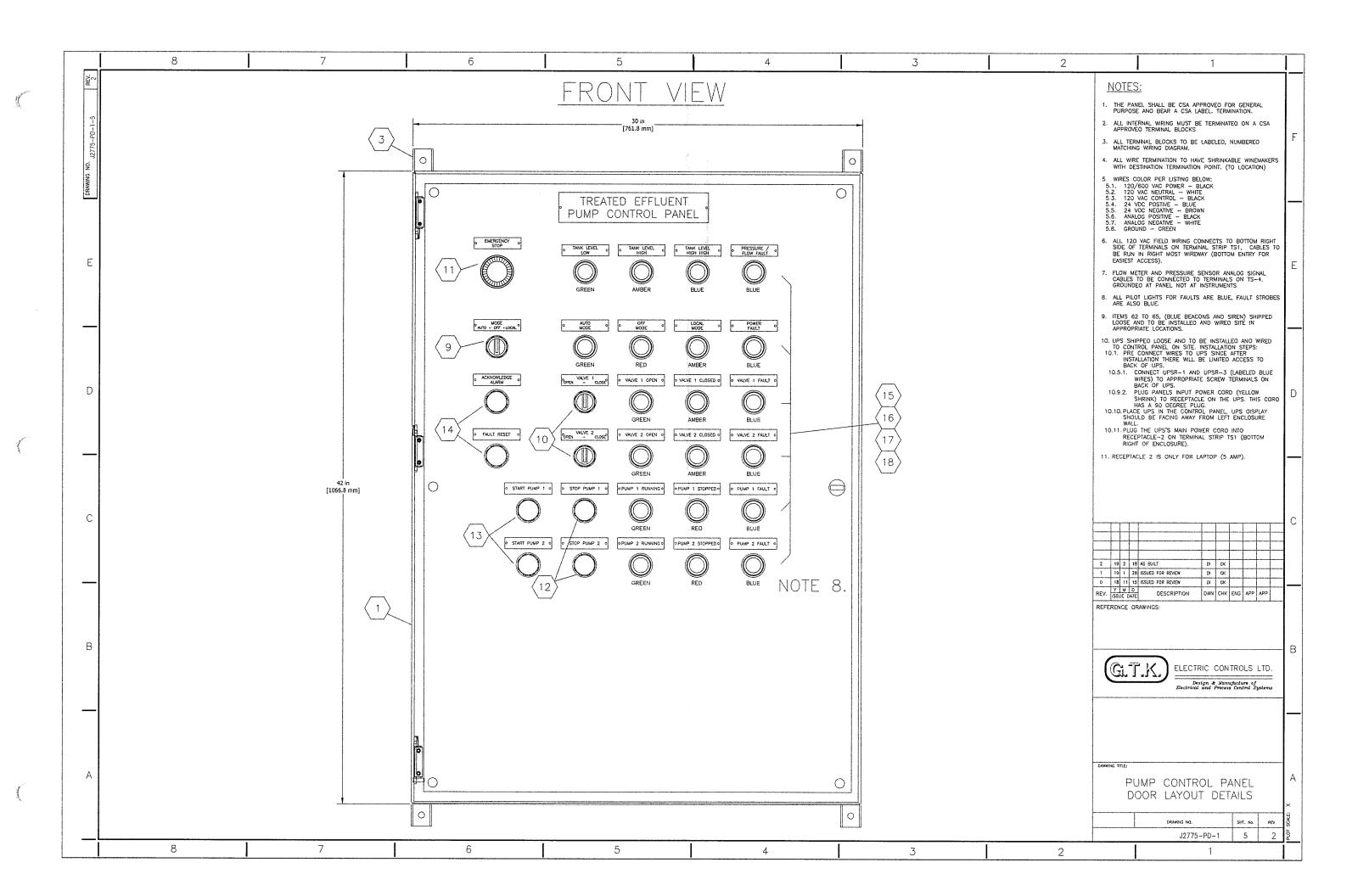


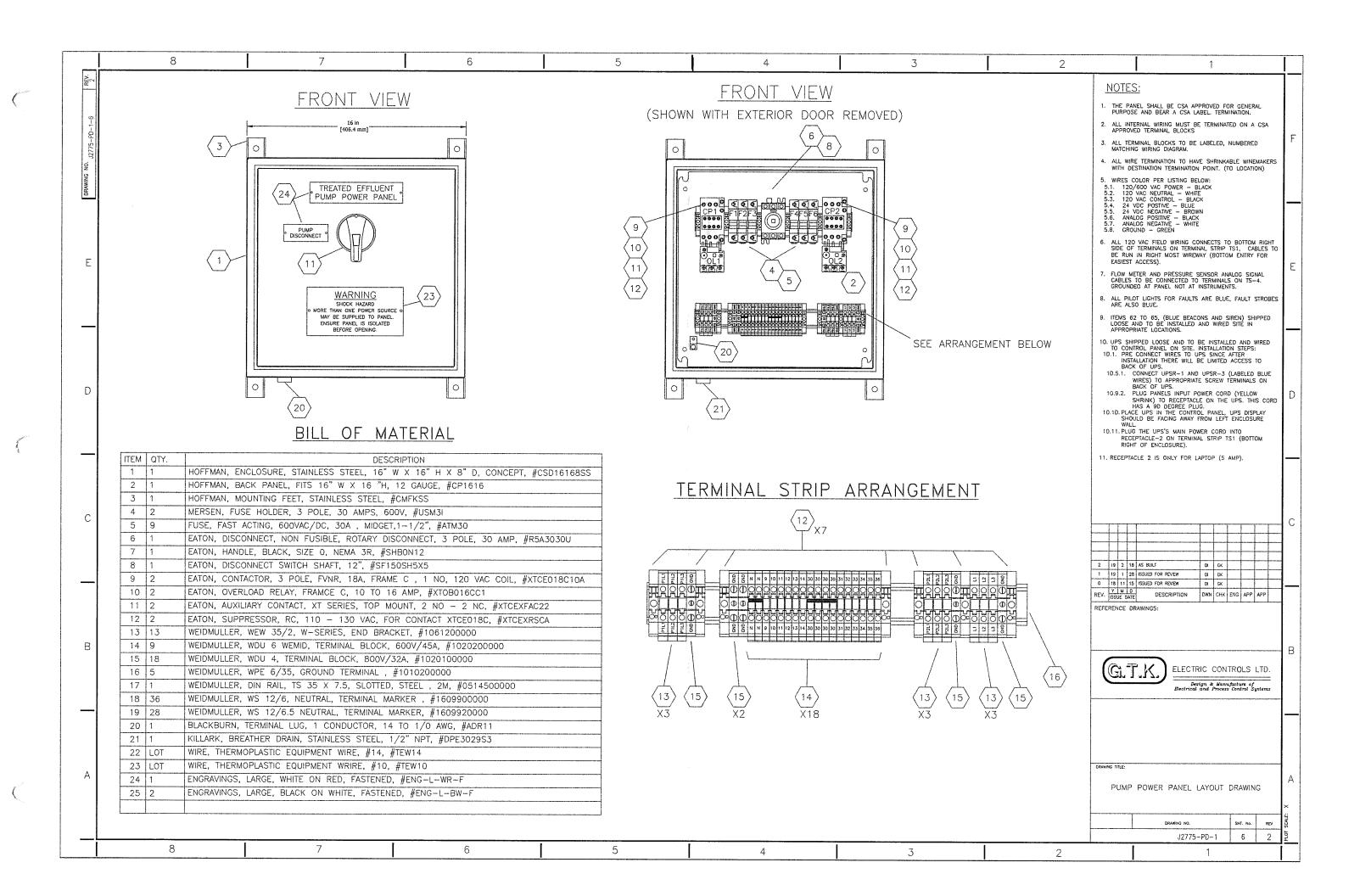


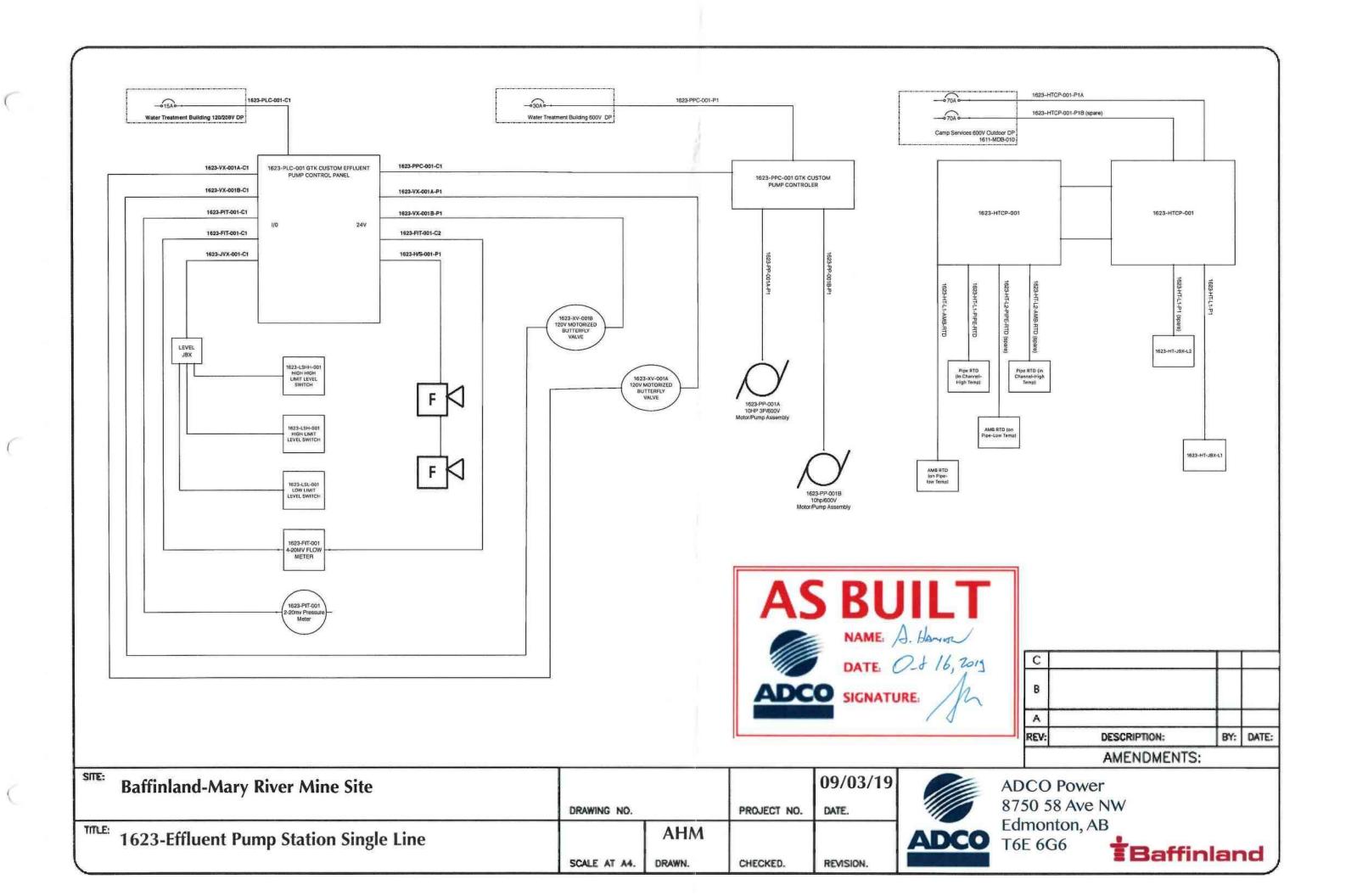














Certificate of Construction Completion

CERTIFICATION OF COMPLETION AND RELEASE FOR STAGE 1 PRE COMMISSIONING

CONTRACTOR:	Nuna/Adco	CONTRACT NO.:	CX001 MEIP 3804	CWP:	CVR-041
LOCATION:	Mary River	ELEVATION:		SUB SYSTEM:	Effluent Pump Station
AREA:	Saiiivik Camp Pad	AREA DESCRITION:			

This certifies that contract installations of all components within the disciplines indicated below have been performed according to the IFC drawings and project specifications. All the installations have passed all the

	proved Inspection 1	Test Plan hav	ve been reviewed an	evant installation and testind verified by the site Qualities are hereby released for	ty Assurance team and all
				RELEASE FOR PRE C	
375	Release includes Select all that apply)		ull Description of Releas	sed Work Area Equipment, syst	
☐ Me ☑ Pip ☑ Ele ☑ Ins	uctural chanical ing	Effluent Pun	np Station and discha	rge line	
		NSPECTIO	ON TEST PLAN R	EQUIREMENTS VERIF	FIED
⊠ RF	Reports (Inspection an I (Request For Informati (Technical Query Regis	on Registry)	orts)	 NCR (Nonconformance Re Scoped Sub-System Batte IFC Drawing Index (Redline) 	ry Limit Drawings
55 555			EXCEP.	TIONS	
N/A	Exceptio (Select all that		(All suppo	Full Description of Exc orting documentation must be attached to	ception of this form prior to acceptance)
1000000	☐ Open Nonconformal ☐ Open Request for In ☐ Open Technical Que ☑ Open B or C Punch	formation ery	Broken valve hand been suspended	els on electrical junction	handles not on site and job has
Cont	ractor Quality Control	Designate	,	1	
	TITLE			NAME (Print / Sign)	DATE
	Contractor Project Ma	anager	Kyle Krahl	111	Nov 143019
	TITLE			NAME (Print / Sign)	DATE
Clie	nt Construction Supe	rintendent		1	
	TITLE	350000		NAME (Print / Sign)	DATE
Clie	ent Quality Assurance	Manager		1	
	TITLE			NAME (Print / Sign)	DATE
Client Construction Manager Dean Maffett 1 D. Make					15-Nov-19
	TITLE			NAME (Print / Sign)	DATE
	Commissioning Man	ager	timen magi	ININO 1	- NY-NOU 2015
V THEY	TITLE			NAME (Print / Sign)	DATE



Care and Custody Certificate

TRANSFER OF CARE, CUSTODY AND CONTROL

		101/2		
CONTRACTOR: Nuna/Adco	CONTRACT NO.:	CX001 MEIP 3804	CWP: CVR-	041
LOCATION: Mary River	ELEVATION:		SUB SYSTEM:	Effluent Pump Station
AREA: Saiiivik Camp Pad	AREA DESCRITION			
ORIGINATING CONTRACT "A" DETAILS (SCOPE OF	16			
	CUSTODY T	RANSFER		
FROM CONTRACTOR "A": Nuna / A	dro	TO CONTRACTOR "B"	Houtch	
This is notice to "B" Hatch		Work Area/Materials as p	per P.O. and/or Fi	ree Issue Tagged
Items is/are being transferred by "A"	A/Ada and	is/are being fully accept	ted by "B"	tch
	ptions listed below	(if any):)
		STODY TRANSF	ER	
Effluent pump station and d	TScharge IT me			
R	EFERENCE I	DRAWINGS		
H353004-CX001-227-248-0001	Rev: o		31031 418	Rev:
	EXCEPT	TONS	and the same of th	
1. Completion of Fina			١,٥	
2.)	
STAKE HOLD	ERS ACCEP	TANCE AND SIG	N OFF	e militarius.
FROM CONTRACTOR "A"	Co	QC DESIGNATE	"ACCEPTED AN	D RELEASED"
PRINT NAME: Kyle Krahi	SIGN	ATURE: _ t	0	
DATE: NOV 15 2019				
TO CONTRACTOR "B"	\	QC DESIGNATE	"ACCEPTED AND	RECEIVED"
PRINT NAME: Dean Moffet	SIGN	ATURE: ~~	pa	
DATE: 15-Nov-19				
CLIENT/QA Designate:	and the second		100	
PRINT NAME	SIGNA	ATURE:		
DATE:				



Declaration of Completion

CERTIFICATION OF PRE COMMISSIONING COMPLETION AND RELEASE FOR STAGE 3 COMMISSIONING

CONTRACTOR:	Nuna/Adco	CONTRACT NO.:	CX001 MEIP 3804	CWP:	CVR-041
LOCATION:	Mary River	ELEVATION:		SUB SYSTEM:	Effluent Pump Station
AREA:	Saiiivik Camp Pad	AREA DESCRITION:		32	
ORIGINATING CO	ONTRACT "A" DETAILS (SCOP	PE OF WORK):			

This certifies that contract installations of all components within the discipline indicated above have been successfully tested in accordance with the required testing procedure for that component and that the work has met the specified standards of quality assurance and quality control and is hereby released form Stage 2 Pre commissioning and passed all Pre-Operational testing.

DESCRIPTION OF COLD COMMISSIONING COMPLETION AND RELEASE FOR COMMISSIONING

Release includes (Select all that apply)	Full Description of Cold Commissioned Work Area Equipment, system and of Sub-System (Include all equipment identification tags)
☐ Civil ☐ Structural ☐ Mechanical ☑ Piping ☑ Electrical ☑ Instrumentation & Controls	2x discharge pumps 1623-PP-001A/B 2x 120V motorized butterfly valves 1623-XV-001A/B Flow indicator 1623-PIT-001 Pressure indicator 1623-PIT-001 Treated Effluent Pump Control Panel Treated Effluent Pump Power Panel Treated Effluent Heat Trace Controller Effluent Pipeline HDPE to discharge pond

INSPECTION TEST PLAN AND COMMISSIONING DOCUMENTATION

☑ ITP Reports (Commissioning Test Reports)	☑ IFC Drawings (Redlined As-builts)
19 To 1 19 19 19 19 19 19 19 19 19 19 19 19 1	

The Construction Testing QA/QC Test Reports, Pre-commissioning reports and stakeholder sign-off documentation for each component are contained within the Construction Completion Documentation Dossier. This Pre-commissioning Completion Certificate and release for Commissioning is only for the above stated system/sub-system or equipment tags.

Contractor Quality Control Designate	1	
TITLE	NAME (Print / Sign)	DATE
Contractor Project Manager	Kyle Krahl / C.	Nov 14 2019
TITLE	NAME (Print / Sign)	DATE
Client Construction Superintendent	Ī	
TITLE	NAME (Print / Sign)	DATE
Client Quality Assurance Manager	1	
TITLE	NAME (Print / Sign)	DATE
Client Construction Manager	Dear Moffett 1 D. Mar	15-Nov-19
TITLE	NAME (Print / Sign)	DATE
Commissioning Manager	timen misquiling	N-NOV-15
TITLE	NAME (Print / Sign)	DATE



Turnover Package Review of Completion

STAGE 3 COMMISSIONING COMPLETION AND DECLARATION OF CONSTRUCTION COMPLETION

CON	ITRACTOR:	Nuna/Adco	CONTRACT	NO.:	CX001 MEIP 3804	CWP:	CVR-041	
LOC	ATION:	Mary River	ELEVATION:			SUBSYSTEM:	Effluent Pump Station	
ARE	A:	Sailiivik Camp Pad	Ď	AREA	DESCRITION:			
SYSTEM / SUB SYSTEM NO.:				SYSTEM / SUB SYSTEM DESCRIPTION:				
ORIC	GINATING CONTRA	CT DETAILS (SCOPE	OF WORK):		Effluent pump s	station and discharge	pipeline	
This	Declaration is	declaring the bel	ow disciplin	es and	the described scope ope of work (if any) h	of work is const	ruction complete and	
and	all items have	been captured on	the Master	punch	list (RP-G-022R0). An	as been agreed i v outstanding ite	upon with the client ems or scope of work	
	will not affect p	person's safety, e	quipment in	tegrity,	life of mine or operat	ing systems for	its intended use.	
					TION OF THIS STA			
1100	elease includes			ion of W	ork Area, Equipment, syst	tems and of Sub-Sy		
(8	Select all that apply)	Ov disabases as		(1	nclude all equipment identification	n tags)	-	
Īυ	IG Development	2x discharge pur 2x 120V motoriz	ed butterfly va	001A/B lves 162	3-XV-001A/B			
1 S T 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	tructural lechanical	Flow indicator 16 Pressure indicat		01				
	iping	Treated Effluent	Pump Contro	Panel				
1.0	lectrical	Treated Effluent Treated Effluent						
	nstrumentation & ontrols	Effluent Pipeline	HDPE to disc	harge po	ond			
ymmyes	INSPECTI	ON TEST PLAI	V CLOSE	A TUC	ND TURNOVER R	EQUIRMENTS	VERIFIED	
100	laster Punch List (Cleared		Certifica	te of Construction Comple			
		dex (RP-G-023R0) Notification (RP-G-01	17R0) 🖂		ssioning(RP-G-018R0)	T-DT1	er come en company de l'acce, u	
			, 🗖	Commis	te of Pre-Commissioning sioning(RP-G-019R0)	completion and rele	ease to	
		OU	STANDING	G WOF	RK NOT COMPLET	ED		
N/A	Outs	tanding Incomplete S	Scope		Full Description of Outs	tanding Work from	the Scope of Work	
	Master Punc	h List (RP-G-022R0)						
I, the	e undersigned,	declare that the	described al	ove in	stalled equipment, as:	sembly or discip	line scope of work	
testi	ing and installa	arawings, IFC spi tion inspections a	ecifications, as per the a	IFC in:	stallation details, Cod d (ITP) Inspection Tes	es and to all Loc t Plan have been	al Regulations. All	
repo	ort have been re	eviewed and sign	ed off.		- (III) mapadadin 100	t rian nave beer	r completed and all	
С	ontractor Qualit	y Control Designat	е		1			
	T	ITLE			NAME (Print / Sign)	DATE	
	Contractor P	roject Manager	Kyle	Kra	11	0	Nov 14 2019	
	T	TLE		/31.55	NAME (Print / Sign)	DATE	
(Client Constructi	on Superintendent			1			
	TI	TLE			NAME (Print / Sign)	DATE	
	Client Quality As	ssurance Manager	200	1c Pc	Dans. 1	R	21-ch-81	
	TI	TLE			NAME (Print / Sign)	DATE	
		uction Manager	Dea	· Mo	ffett 1 D.	mage	15-Nov-19	
-	TI	TLE			NAME (Print / Sign)	DATE	
Clien	- V2	g/Operations Mana	ager Elmi	in iv	MAQUILING 1	*	K-HOV 19	
7	TI	TLE	The state of the s		NAME (Print / Sign	\	DATE	





Commissioning Plan Pre-Operational Testing Treated Effluent Pump Station and Pipeline Stage-4 Commissioning Procedure

Procedure

Treated Effluent Pump Station and Pipeline Stage-4 Commissioning Procedure

Pre-Operational Testing Management

2019-07-28	A	Internal Review	E. Maquiling	T. Kane	T. Haroon	
DATE	REV.	STATUS	PREPARED BY	CHECKED BY	APPROVED BY	APPROVED BY
						Client





Commissioning Plan
Pre-Operational Testing
Treated Effluent Pump Station and Pipeline Stage-4
Commissioning Procedure

STAGE 4 - SYSTEM COMMISSIONING PROCEDURE

Sub-System Number and Title:

CS-1623-001-Treated Effluent Piping Change and associated heat trace from 800-man camp to tie in existing 3 line.

Inclusions:

Effluent Tank, Pumps and effluent piping to tie in existing 3 line.

Exclusions:

Existing effluent line.

1. Safety, Health and Environment

- List the Safety, Health and Environment objectives and procedures applicable to this sub-system
- Follow all lock-out procedures
- Follow BIM Fuel Unloading procedures
- State special considerations and or hazards and JHA (job hazard analysis) specific to this system before any work in section 4 starts.
- Definition of Safety and Warning Signs used in this Procedure are the following:

STOP	Instructions and information that follow the Stop Sign address an identified hazard. Failure to follow the instructions can increase exposure to this potential hazard.		
Caution	Instructions and information that follow the Caution Sign identify actions that are necessary to prevent accidental damage to plant or equipment		
Important	Does not usually pertain to actions that can result in serious consequences, but it is more critical for the user to know than the information in a Note.		
A.	Includes information that is helpful, but not part of the action described in the step.		
ENVIRONMENT	Instructions and information that follow the Environment Sign identify actions necessary required to prevent exposure to environmental incidents.		

2. Acceptance Criteria

The acceptance criteria for this sub-system are as follows:

 Effluent Storage Tank and pump piping syste is filled with On-spec Effluent Water no noticeable during In-Service Leak Test:





Commissioning Plan
Pre-Operational Testing
Treated Effluent Pump Station and Pipeline Stage-4
Commissioning Procedure

- No leaks during the in-service leak test of 2.4 km new 3" HDPE SDR11 (insulated and heat traced) pipeline to the licensed discharge point into the Mary River.
- Mechanical Load Run Test of Two (2) new pumps (1623-PP-001A/B) are completed.
 - Actual pump capacity verified against Gould 15SV5FC30 pump performance curve/data.
 - o No mechanical seal seaks and no abnormal sound during operation.
 - o Normal motor winding and bearing temperatures.
 - Vibration within Vendors Installation, Operation and Maintenance (IOM) Manual, or in the absence of it, any acceptable industry standard. (e.g. ISO 2372 (10816, etc.).

3. Pre-Requisites

State all pre-requisite activities and criteria that need to be performed an in place prior to commencing commissioning including but not limited to:

- Walkdown has been completed and all Category 1 and 2 punch items have been cleared.
- Construction inspection and test check sheets filled up and signed off.
- Construction Turnover Certificate has been signed off.
- Ready for Commissioning Assurance Certificate/CS-1630-001A has been signed off.
- Dry commissioning is completed as described in 7.1.3 Dry Commissioning of the Scope of Works (Doc No. H353004-CX001-227-248-0001).
- Pre-Commissioning Checklists Completed by Contractor.
- JHA for the effluent piping is approved and available.
- Field Level Risk Assessment has been completed.

The commissioning engineer must confirm beforehand that these are all in place as expected. The work instructions will be issued well in advance of the scheduled commissioning date to allow the engineer to make the required arrangements.

4. Meti	4. Method Statement					
Step No	ACTION					
Important	Prior to commencing pre-operational testing, make sure that valves are in correct position, in accordance with the operation pre-start valve checklist or marked up P&ID.	Completed (Sign/Date)				
1	 Ensure all pre-requisites in Section 3 are confirmed completed for the following: Control & Instrumentation and Electrical Works. Effluent tank, Pumps 1623-PP-001A/B, 2.4 km new 3" HDPE SDR11 (insulated and heat traced) pipeline to the licensed discharge point into the Mary River. 	ADCO:				





Commissioning Plan
Pre-Operational Testing
Treated Effluent Pump Station and Pipeline Stage-4
Commissioning Procedure

Prior to Running of pumps and run-down of effluent water from Sailivik WWTP, conduct a Pre-Start-Up Safety Review Walkdown the Sub-system CS-1623-001 and record punch items in the punch list. The expected attendees are the following.



- BIM Site Services
- HNCC WWTP Operator
- Hatch and BIM Safety/Environment
- Hatch Construction and Commissioning



All of priority 1 and 2 items to be closed/cleared prior to the start of the wet commissioning or Stage-4 Process Commissioning.

CS-1623-001-Treated Effluent Piping Change and associated heat trace from 800-man camp to tie in existing 3 line.



Ensure that effluent water samples are taken from WWTP for laboratory testing shall be confirmed within specification prior to filling the effluent tank and pipeline to the tie-in point to existing effluent line.

- 3 Energize Pumps1623-PP-001A/B.
 - Power On the Treated Effluent Pump Power Panel.
 - Power On the Treated Effluent Pump Control Panel.





Fill the effluent tank with treated influent water from Waste Water Treatment PlantADCO to normal water level just below LSH 001. Fill further to confirm LSHH 001 function.

Refer to Attached marked up Drawing.





1	Priming	g of Pumps 1623-PP-001A/B	· · · · · · · · · · · · · · · · · · ·	0.300000	ADCO:
	 Confirm valve for vacuum truck connection is closed. Open gradually valves and prime pumps by opening their respective vents until all air are evacuated in the volute. 				
	1				
	Ensure	that pumps are properly prin	ned prior to start-up.	- Miles	
tion		that pumps are properly prir		nality Check.	ADCO:
50000		Rotation Check of Pump and Select Pump Discharge Va	Off-On Valve Function	al. Stroke OPEN an	
50000		Rotation Check of Pump and Select Pump Discharge Va CLOSE. Valve no.	Off-On Valve Functionalves 1 and 2 in Manu	al. Stroke OPEN an	
50000		Rotation Check of Pump and Select Pump Discharge Va CLOSE. Valve no. XV001A or Valve 1	Off-On Valve Functionalves 1 and 2 in Manual OPEN	al. Stroke OPEN an	
50000		Rotation Check of Pump and Select Pump Discharge Va CLOSE. Valve no.	Off-On Valve Functionalves 1 and 2 in Manu	al. Stroke OPEN an	





	If pump is in reverse rotation, call a qualified electrician to correct the deficiency.		
Important 6	Level Switches, Check/Verification.	ADCO:	_
	 Fill the Effluent Tank and verify high level switch LSH001 activates and "High Level Light On" the Pump Control Panel. Raise level or simulate high level to verify high high level activates LSHH001 and "High High Level Light On" the Pump Control Panel. Verify "Alarm Beacon YL001 Lights On and YA001A Sounds On". LSL001 to be verified in the succeeding step. 	AIL	
Aute.	Three float type limit switches are utilized to control the operation of the pump sets, 1623-PP-001A and 1623-PP-001B. The pump sets are operated in a duty/standby arrangement. The PLC shall maintain equal operating hours for each pump set and shall as far as possible alternate the pumps after each start.		
7	 Pump Automatic Mode Functionality Check/Verification. Turn selector switch of Effluent Pump A (1623-PP-001A) to AUTO. Fill the effluent tank and verify pump 1623-PP-001A auto start at LSH001. Confirm delivery valve XV001A starts to open. Check opening time. Confirm Effluent Pump A (1623-PP-001A) starts. Push E-Stop and verify pump 1623-PP-001A stopped immediately. Re-start pump1623-PP-001A Verify pump 1623-PP-001A auto stop at LSL001 and "Low-Level Lights On" at the Pump Control Panel". 	ADCO:	



HATCH

Baffinland Iron Mines LP Mary River Expansion H353004

Note:	Process interlock alarms shall be required to be reset via the operator at the local control panel.	
8	Verification of (1623-FIT-001) and pressure (1623-PIT-001) Verify if flow is established in the line after a set period (initially 10 seconds) after a pump has been started. Default values of time and pressure New values of time and pressure Other settings Verify pressure (1623-PIT-001) is established in the line after an initial stabilization period of starting the pump is raised.	
	Default values of time and pressure	
Important 8	Pressure verification shall be used to protect against a burst pipe situation. The pressure and flow limits shall be established during commissioning of the system. Should either of these situations arise an alarm shall be raised. Mechanical Load Test Run of Pump.	
	Start the pump and take a record of the following, where possible. For 1623-PP-001A Voltage start-up and running current, bearing/motor winding temperature, if possible. For 1623-PP-001B Voltage start-up and running current, vibration, bearing/motor winding temperature, if possible. Acceptance Criteria: Vibration and bearing temperatures will be deemed acceptable if reading is within Vendor's acceptance criteria, or in the absence of it, any acceptable industry standard. (e.g. ISO 2372 (10816, etc.)	
9	In-service leak test of 2.4 km new 3" HDPE SDR11 (insulated and heat traced) pipeline to the licensed discharge point into the Mary River.	

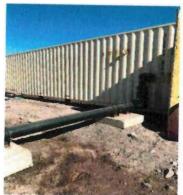


HATCH

Baffinland Iron Mines LP Mary River Expansion H353004

Commissioning Plan Pre-Operational Testing Treated Effluent Pump Station and Pipeline Stage-4 Commissioning Procedure

- Start pump and rundown effluent water to the pipeline until treated effluent water is observed at the licensed discharge point. Take the flow rate at FIT001 and discharge pressure at PIT001 of the pump 1623-PP-001A or B
 - o FIT001 = 55 1/5 gpm
 - PIT001= 0
 - PI001A or B=
 - o Accu. pumping time 2980 _minutes (for 7-days)
- Patrol the pipeline for any visible leaks.
- Verify if effluent water is coming out at the discharge point of the pipeline.
- Pipeline is deemed acceptable if no leak is visually found during the site survey.





1	Λ
1	A
*	ote

Based on the design flow of 18.75 m3 /h and 2.4 km pipeline distance as described in H353004-CX001-227-248-0001 it will take 35 minutes or more to fill and in-service leak test the pipeline. Ensure test is done according to ASME B31.3 Category D guidelines.

Coordinate WWTP and HATCH/HNCC/BIM Site Services and Environment teams prior to rundown of treated effluent water for in-service leak test of

10

Fill-up all applicable Pre-operational Testing and Commissioning Checksheets/record sheets of;

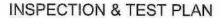
- Pumps,
- Instrument and Control,

ADCO:





	 Piping, Electrical equipment, Pump Container heating and ventilation system. 	
	Hatch/BIM to witness.	
9	Other pre-operational /Commissioning Checks, if required.	ADCO:
10	Put the Effluent Pumps in AUTO and conduct a 7-week"Wet (Commissioning) Test".	ADCO:
11	Conduct training to Operation and Maintenance Contractor WWTP Operator and Maintenance Team and BIM WWTP Operator for each Shift. Keep a record of training.	ADCO:
12	Transfer of care and custody Operations of the Effluent Pipeline and pump house.	ADCO: Am HNCC:
A.	Performance Check and Provisional Handover Assurance Certificate is not a Completions Certificate.	



Contract ADCO 3804 - MEIP

Site	Area	Facility	Work Package Title	
Mary River	Effluent Pumping station to Existing Effluent tie in point	800mc Waste Water Service	CE-001 -MEIP- Effluent Line	
Work Pkg No	ITP Number -3804-035-	Inspection & Test Plan Title	800mc Effluent Line ITP	

nspection Types			Document Review
	"S" - Surveillance	Review on ongoing basis. Notification of work status not required. Approval to proceed not required.	
	"N" - Notification	24 hour notification to be provided prior to commencing work step. Work proceeds with or without response or attendance.	
	"W" - Witness	24 hour notification to be provided prior to commencing work step. Work shall not proceed without inspecting authority attendance.	
	"I" - Inspection	Documented inspection / evaluation required. Verify compliance with specifications and standards prior to proceeding.	
	"R" - Review	Review documents to verify compliance with specifications and standards prior to proceeding.	
	"H" – Hold	Work shall not proceed without written approval from inspecting authority.	



INSPECTION & TEST PLAN

Contract ADCO 3804 - MEIP

Site	Area	F 30		ADCO 3804 -
one	Alea	Facility	Work Package Title	
Mary River				
Work Pkg No	ITP Number	Inspection & Test Plan Title		
CE-001	-3804-035-			

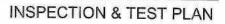
	Work Step / Inspection Stage	Acceptance Procedure / Specification	Verifying Document	Contractor				Hatch	
		/ Criteria	y ornying Doodinent	Туре	Initial	Date	Туре	Initial	Date
1	QAQC Managment								
1.1	ITP	Internal Audit- Hatch Audit of ITP		Н	a		••••	an,	
1.2	Document/RFI Management	Approved project specifications	Appropriate documentation and traceability	s	14	***************************************	ontonician eg	QM.	
1.3	Construction Drawings	Approved project specifications	Appropriate documentation and traceability	Н	k(Q M.	
1.4	Verification of Testing Equipment	Approved Project specifications and Performance requirements	CTS-75-015 Calibration of Instruments	S	KK		***************************************	J.M.	
2	Mechanical Installation) II O		на маници.		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
2.1	Materials and Equipment	Purchase Order	Material Receiving Reports	S	KK			10.~~	



INSPECTION & TEST PLAN

Contract ADCO 3804 - MEIP

2.2	Installation/Fusing of HDPE Piping	Approved project specification and Manufactures installation specifications	CTS-60-014 HDPE FusionLog CIS-60-210 HDPE Piping CIS-50-057 Bolt Torque CIS-60-010 Gaskets, and Bolting	S	1(1(D,m.
2.3	Pressure or service testing of HDPE Piping	Approved Project Specifications	CTS-60-007 Pressure Piping Report	W	2C	D.m.
2.4	Installation of HDPE Insulation	Approved project specifications / Manufactures installation instructions	CIS-60-017 Piping Thermal Insulation	S	XC	Q.m.
3	Electrical Installation	THE REPORT OF THE PROPERTY OF		·		
3.1	Materials and Provide Equipment	Purchase Order	Material Receiving Reports	S	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	lm.
3.2	Installation of 600V Heat Trace and Auxillaries/Equipment	Approved project specifications, Approved project Drawings, Manufactures installation Instructions CEC	CTS-70-039 Heat Trace A CTS-70-040 Heat Trace B CTS-70-033 Electrical JBX CIS-70-035 Electrical Devices	S	1/12	lam.
4470000000						Salarana





Contract ADCO 3804 - MEIP

	Work Step / Inspection Stage	Acceptance Procedure / Specification	Verifying Document	Contractor		Hatch			
		/ Criteria	voinying Bootiment	Туре	Type Initial Date		Type Initial [Date
3.3	Installation of 600V Heat Trace Service Feeds	Approved project specifications, Approved project Design, CEC	CIS-70-007 (CABLE), CTS-70-003 (MEGGER),	S	KK	***************************************		DM.	010111111111111111111111111111111111111
4	Final QC and System Walkdown	Acceptable for the second seco						One of the control of	
4.1	Red Line AsBuilts	Approved project specifications	Proper Documentation	s	ki(D.M.	
4.2	Punch List(s)	Approved project specifications	PIS-70-999	s	KI		***************************************	a.m.	
5	Project Close-Out								
5.1	Documentation turnover	Approved project specifications	Proper Documentation & CIS-50-040 (CLOSING)	R	kr.			Q. M.	



INSPECTION & TEST PLAN

- MEIP

DESIGNATE	CONTRACTOR	TITLE	NAME	Contract ADCO 3804 -
PREPARED BY:	ADCO POWER LTD	CONSTRUCTION MANAGER		
REVIEWED BY	NUNA	PROJECT COORDINATOR	Kne Krahi	KCP
APPROVED BY:	HATCH	CLIENT REPRESENTATIVE	Dena Moffett	M M
ACCEPTED BY:	HATCH	CLIENT REPRESENTATIVE	Dean 10ttett	Cl. Moho

ADCO CWP QAQC TURNOVER PACKAGE TABLE OF CONTENTS



Tag No:		Project No:	3804 BIM MEIP
(Sub)System:	Effluent Line	Area:	800 Man Camp Pad
Description:	Effluent Discharge Line	Drawing:	
CWP:	3804-021	CLIENT:	BAFFINLAND IRON MINES, Baffin Island

Table of Contents
HDPE Piping CIS-60-013
Piping Installation CIS-60-032
Visual inspection of Flanges, Gaskets, and bolting CIS-60-010
Piping Thermal Insulation CIS-60-017
HDPE Spool Fusion Log CIS-60-014
Calibration of Instruments CIS-75-015/cer+if: cation of fusers
Bolt Torque Value Record CIS-50-057
Cable CIS-70-007
Heat trace pre insulation CTS-70-039
Heat trace post insulation PIS-70-017
Thermon Cable Testing Report
Misc Equipment CIS-70-036
Closing CIS-50-040
As-Builts PIS-10-001
Punch List PIS-70-999

	Trades Person	Supervisor	Field Eng or QA/QC
Print Name:		Kyle Kran)	There's College
Sign:		riv	2/1
Date:	The state of the s	NOV 94 2019	Nov 13/19

Construction Inspection Sheet CIS-60-013 HDPE Piping ITP



Tag No: (Sub)System: Description:	Sailivik 3" Effluent L Effluent Line HOPE Effluent Discharge Line DRI	Area:			04 BIM I Man Can	
CWP:	3804-021	CLIENT:	BAFFIN	AND IF	ON MIN	NES, Baffin Island
Item Descript	ion		Yes	No	N/A	
 Jointer II 	0		163	NO	N/A	Comments and Dat
Joint No.	CFASEAL TO LIVE	NOT PULLDINE	_	_	-	
	Date I delon deline	100			-	
	ion and inspection :				 	
04a - Pip	e - ends clean, dry and free of damage		V			
	e - relieved from tension		1			
04c - Too	ols and heating equipment - proper working order		1/			
04d - Too	ols and heating equipment - shielded from inclemen	nt weather	1			
04e - Hea	ating equipment - surfaces correct temperature					
5 Assembly						
05a - Cor	mponents securely fastened					
	e ends 'faced'		/			
05c - Pipe	e profiles aligned		1			
	e interfaces melted		1/	_		
	e profiles jointed					
05f - Join	t held under pressure		1	-		
6 Visual ins	spection and Joint Paramaters recorded		-		-	1110 11
	Saddle / Sidewall Fusion Joint		V		-	Not Resold
	on and inspection :			-		
08a - Pipe	e - area clean, dry and free of damage			_		
08b - Fittii	ng - correct type, dimensions and free of damage			-		
08c - Pipe	e - area of joint abraded correctly			-		
08d - Fittir	ng - area of fusion abraded correctly					
08e - Sad	dle fusion machine - proper working order		_	-		
08f - Heat	er saddle adapters - correct dimensions					
9 Assembly				\neg	1	
09a - Hea	ter saddle adapters and saddle fusion machine inst	talled correctly	_			
09b - Part	s aligned correctly		\neg	\rightarrow	_	
09c - Pipe	and fitting heated correctly			-	_	
09d - Joint	t held under pressure				7	
10 Visual insp	pection completed				V	
	- Socket Fusion Joint		\rightarrow	-	V	
12 Preparatio	n and inspection :			$\overline{}$	-	
12a - Pipe	- end clean, dry, chamfered and free of damage			_		
12b - Sock	ket - clean and dry (depth checked)					
12c - Cold	ring - correct dimension					
	ing tool - operating correctly					
13 Assembly:						
13a - Cold	ring clamped into correct location					
130 - Pipe	and socket heated correctly					
130 - Joint	held under pressure				V	
	Trades Person	Supervisor		11-	Field F	ng or QA/QC
int Name:	GARES POLSEMAL	1 //		1		
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Construction Inspection Sheet CIS-60-013 HDPE Piping ITP



14 (Visual inspection completed 15 Inspection - Electrofusion Joints 16 Preparation and inspection : 16a - Pipe - clean, dry and free of damage 16b - Pipe - dean of pint abraded correctly 16c - Pipe - releved from tension 16d - Electrofusion inting/coupling of correct dimensions 16e - Electrofusion control box operating correctly 17d - Pipe marked with electrofusion fitting/coupling location 17 Assembly: 17a - Pipes and electrofusion fitting/coupling placed in clamping fixture correctly 17b - Electrofusion control box connected to electrofusion fitting/coupling and power source 17c - Electric current applied for the recommended period 18 Visual inspection completed 19 Inspection - Flanged Joint 20 Preparation and inspection: 20a - Flange adapters - correct type and dimension 20b - Gland ring/follower - correct type and dimension 20c - Gasket - correct upe and dimension 20d - Crip ring (if required) - correct type and dimension 20d - Grip ring (if required) - correct type and dimension 20d - Flange faces 20d - Boting in the source of the		Tag No:		Project No:	Total S	38	04 BIM N	MEIP
Description: Effluent Discharge Line Drawing:	(Sub)System:	Effluent Line	Area:		800 1	Man Cam	nn Pad
CWP: 3804-021 CLIENT: BAFFINLAND IRON MINES, Baffin Island lem Description Ves No N/A Comments and Vsual inspection completed 14 Vsual inspection completed 15 Inspection - Electrotusion Joints 16 Preparation and inspection: 16a - Pipe - clean, day and free of damage 18b - Pipe - clean day not free of damage 18b - Pipe - relieved from tension 18d - Electrofusion intring/coupling of correct dimensions 18d - Electrofusion intring/coupling of correct dimensions 18d - Electrofusion intring/coupling of correct dimensions 18d - Electrofusion intring/coupling placed in clamping fixture correctly 18d - Pipe - relieved from the solution of thing/coupling location 17a - Pipes and electrofusion fitting/coupling placed in clamping fixture correctly 17b - Electricusion control box connected to electrofusion fitting/coupling and power source 17c - Electricusion and inspection: 18d - Fiange adapters - correct type and dimension 20b - Gland ringeflower - correct type and dimension 20c - Gasket - correct type and dimension 20c - Gasket - correct type and dimension 20c - Fiange faces 20f - Bolts, nuts and washers installed 20g - Froque whench used (calibration) 21 - Alignment correct 23 - Solling: 23a - Sequence correct 23b - Torqueed 24 - Visual inspection completed 25 - Inspection - Mechanical Compression Joint 26c - Gasket - correct type and dimension 26c - Gasket - correct type and dimension 26c - Gasket - Correct type and dimension 27d - Sequence correct 28d - Sequence correct type and dimension 27d - Sequence correct 28d - Sequence correct type and dimension 28d - Gring right (Frequence) - correct type and dimension 28d - Gring right (Frequence) - correct type and dimension 28d - Compression nut - correct type and dimension 28d - Gring right (Frequence) - correct type and dimension 28d - Gring right (Frequence) - correct type and dimension 28d - Gring right (Frequence) - correct type and dimension 28d - Gring right (Frequence) - correct type and dimension 28d - Gring right (Frequen	Des	scription:	Effluent Discharge Line	Drawing		0001	viair Cair	ip rau
Item Description SOUNCE CLIENT. BAF-HINLAND IRON MINES, Baffin Island						O B POR		
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23b - Torqued 24 Visual inspection completed 25 Inspection - Mechanical Compression Joint 26 Preparation and inspection: 26a - Stiffener - correct type and dimension 26b - Compression fitting body - correct type and dimension 26c - Gasket/'O' ring - correct type and dimension 26e - Compression nut - correct type and dimension 26e - Compression nut - correct type and dimension 27 Alignment correct 28 Assembly correct 29 Visual inspection completed Comments: Trades Person Supervisor Field Eng or QA/QC Print Name: Arrest Arre	23		e correct					
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Inspection - Mechanical Compression Joint 26 Preparation and inspection : 26a - Stiffener - correct type and dimension 26b - Compression fitting body - correct type and dimension 26c - Gasket/'O' ring - correct type and dimension 26d - Grip ring (if required) - correct type and dimension 26e - Compression nut - correct type and dimension 27 Alignment correct 28 Assembly correct 29 Visual inspection completed 20 Visual inspection comple	24		on completed		/			
26 Preparation and inspection : 26a - Stiffener - correct type and dimension 26b - Compression fitting body - correct type and dimension 26c - Gasket/'O' ring - correct type and dimension 26d - Grip ring (if required) - correct type and dimension 26e - Compression nut - correct type and dimension 27 Alignment correct 28 Assembly correct 29 Visual inspection completed 29 Visual inspection completed Comments: Trades Person Supervisor Field Eng or QA/QC Print Name: James Porpurst Arraca Dan Moffeth Sign: James Porpurst Arraca Dan Moffeth Dan Mo								
26a - Stiffener - correct type and dimension 26b - Compression fitting body - correct type and dimension 26c - Gasket/'O' ring - correct type and dimension 26d - Grip ring (if required) - correct type and dimension 26e - Compression nut - correct type and dimension 27 Alignment correct 28 Assembly correct 29 Visual inspection completed Comments: Trades Person Supervisor Field Eng or QA/QC Print Name: Arrace Marco Description Sign:							V	
26b - Compression fitting body - correct type and dimension 26c - Gasket/'O' ring - correct type and dimension 26d - Grip ring (if required) - correct type and dimension 26e - Compression nut - correct type and dimension 27 Alignment correct 28 Assembly correct 29 Visual inspection completed 29 Visual inspection completed 29 Visual respectively. 20 Visual resp	20						-	
26c - Gasket/'O' ring - correct type and dimension 26d - Grip ring (if required) - correct type and dimension 26e - Compression nut - correct type and dimension 27 Alignment correct 28 Assembly correct 29 Visual inspection completed 29 Visual inspection completed Comments: Trades Person Supervisor Field Eng or QA/QC Print Name: Grace Gr		26b - Compres	sion fitting body - correct type and dimension					
26d - Grip ring (if required) - correct type and dimension 26e - Compression nut - correct type and dimension 27 Alignment correct 28 Assembly correct 29 Visual inspection completed Comments: Trades Person Supervisor Field Eng or QA/QC Print Name: Arrace Arrace Arrace Arrace Departer Sign:		26c - Gasket/'0	or ring - correct type and dimension	'	_			
26e - Compression nut - correct type and dimension 27 Alignment correct 28 Assembly correct 29 Visual inspection completed 20 Visual inspe		26d - Grip ring	(if required) - correct type and dimension					
27 Alignment correct 28 Assembly correct 29 Visual inspection completed Comments: Trades Person Supervisor Field Eng or QA/QC Print Name: Arrest Arrest Arrest Deep Moffett Sign: OF ADCO D. Moffett		26e - Compres	sion nut - correct type and dimension		+	_	-	
28 Assembly correct 29 Visual inspection completed Comments: Trades Person Supervisor Field Eng or QA/QC Print Name: Array Comments Sign: OF ADCO D. Mofert					1-		_	
Trades Person Supervisor Field Eng or QA/QC Print Name: Andrew Andrew Deen Moffett Sign: OF ADCO D. Moffett	28	Assembly corre	ect	70 100 100 100 100		_	_	
Trades Person Supervisor Field Eng or QA/QC Print Name: And Den Moffett Sign: OF ADCO D. Moffett	29	Visual inspection	on completed	3 30 31 10 E W	1	_	1/	
Print Name: Armes Polymer Armes Armes Deen Moffett	Comme	nts:					Y	
Print Name: Armen Bran Moffett Sign: OF ADCO D. Mofe			Trades Person	Supervisor	Т		Fiold F	ng or 04/00
Sign: OF ADIO Q. Make	Print Na	ame:	100	A IDRE I Ida		N		ria managaran ang managaran
.te: \ \(\sum_{15} \langle \langle_{0.00} \)	Sign:		0	AM DE ADE	0	10 ^	Mark	C
1 1611 13 /2014 // (VIV SI 2019) CJE1-17	₊te:		SEPT 15 /2014	// My31,20	19	12	Sel.	.19

Construction Inspection Sheet CIS-60-032 Piping Installation, before Pneumatic Test



	Tag No: Sail	ivik Comp		Project No:		38	04 BIM N	MEIP
(Sub)System:	Effluent Line		Area:		800	Man Cam	nn Pad
Des	cription: 3" ADG	Effluent Discharge Line DR -	11	Drawing:		000	Widir Can	ip i du
	CWP:	3804-021		CLIENT:	BAFFIN	LAND IF	RON MIN	IES, Baffin Island
Item	Description:	P & ID No:			Yes	No	N/A	Comments and Data
1	Ambient Temperature	- For Service	Test	W-(100	110	1 14/14	Comments and Data
2	Test Pressure agreed,		1-631		1	1		
3		imum metal design temperature comp	patible		V	_		
4	Declaration of installat					-	1	
5		ergy reviewed by engineering	-			+	1	
6	Pressure relief device	- set pressure not higher than test pre	essure plus			-		One Ended.
7		45kPa) or 10% of test pressure						your race.
8	Line size and wall thick					-	1	12
9	Material correct			-	V	1	1	
10	All welded joints have	been 100% subjected to non-destruct	tive examine	ed (NDF)			1	
11		including surface finish)		(V	_	-	
12	Stress relief completed					_		
13	Installation straight and				-/	20000000		
14	Line slope per drawing				- V		_	
15	Branches located corre				-		-	
16	Branches reinforced				V		. /	
17	Weepholes in reinforci	ng pad					V	
	Hign point vent in						-	
	Low point drain in				_		1	
	Reducer(s) located cor	rectly			_		-	
21	Reducer(s) type(s) cor			44.5	_		-	
22	Blind(s) revoved			1000	_			
23	Cold spring(s) per drav	ving		-				
24	Clearance for expansion				-			
25	Gaskets type and mate				-			
	Bolt size and material of				1			
	Bolt torque correct		* *					
	Valve flow direction cor	rect			1	725	-	
	Electrical isolation corre	V. 18 18 2	- 1000		- V			
30	Valve identification corr					-/	_	worflek.
	Bypass installed				_	V		
32	Steam orientation corr	ect				_	V	
33	Valves are in the open	1110			-			
	Supports installed corre					-		
	Sufficient supports per							
	Anchors installed corre				/		\vdash	
	Guides installed					_		
	Proper shoes installed	and welded		1,000			./	
	Enough clearance for in	A CONTRACTOR OF THE CONTRACTOR			-			
40	Spring hangers correct	ly installed					./	
	Pins not removed befor					NEX-	/	
		Trades Person		Supervisor			Field F	ing or QA/QC
Print Na	ame: Ja	ZED POLACHER	AM	pass Haven		De	Diam'r.	1. ffett
Sign:	10	2	1	In OF	ADIO	D. ~	MAN	04-
e:	13	ilt 15/2019	11	July 3/	,2019		-Sep-	19

Construction Inspection Sheet CIS-60-032 Piping Installation, before Pneumatic Test



42	Joints and welds free of paint	1./			
43	Pressure safety valve (PSV) isolated with blinds (except the test protection)	V			
44	Expansion joints removed or restrained				
45	Flow restrictions removed			1	
46	Non metallic system checks completed			-	
47	Bonded joints conform		-	V	
48	Line correctly identified		./		
49	Other		V		
50	Specify:				
-					

Comments:

No Preumadic Hist
- Used as a pre service test check.

	Trades Person	Supervisor	Field Eng or QA/C	
int Name:	CARED YOLACURA	Angras Harry	Dean Moffett	
ign:	9	AM OF ADO	Q. mayer	
Date:	SEPT 15/2019	/ XI THY 31,2019	12-501-19	

Construction Inspection Sheet CIS-60-010 Visual Inspection of Flanges, Gaskets, and Bolting





(Sub	Tag No: o)System:	Salivik Carp.	Project No:			04 BIM N	
Des	scription:	Effluent Discharge Line	Drawing:		800	Man Cam	ip rad
	CWP:	3804-021	CLIENT:	BAFFINI	LAND IR	ON MIN	IES, Baffin Island
Item	Description			Yes	No	N/A	Comments and Data
1	Check that flar	nge faces have been thoroughly cleaned, rei	moving all rust and burrs	1		1.,	comments and Data
2	Check sealing of the specifica	surfaces on flange face for any damage, in	accordance with the requirements	/			
3		nge type and rating		1			
4	Check that bol	ts are of the correct size, type, length, clean	liness and absence of burrs	-		\vdash	
5		nuts and washers (where contact is made)				/	
6	Ensure that the	gasket is in accordance with the applicable	material class	-		1	
_ 7	Check the con-	dition and rating of gaskets				-	
8	Ensure that sp	iral wound, metal gasket or sheet gaskets a	re not re-used after use				
9	Check that the	correct thread lubricant is applied to every f	riction surface of the bolt assembly				
10	Check that the	thread lubricant used is suitable for the ope	rating temperature of the system				
11	Torque sequen	ice correct		/	_		
12	Torque values						Tight Nollekyl
13	Identification of	f torqued connection			4.35	1/	10 Wolfery
14	plastic lined fla			V			0
15	Check that bolt plastic lined flat	s are of the correct size, length, cleanliness nges)	and absence of burrs (Metallic or	/			
	Ensure that the lined flanges)	gasket is in accordance with the applicable		V		1	
17	Check that the (Metallic or plas	thread lubricant used is suitable for the oper stic lined flanges)	rating temperature of the system			V	
18	Check that gas	kets are correctly centred			-		
19	Check that all fl	anged joints are snugged up squarely				V	
		surement of the gap between the flange face	es taken around the circumference			1/	
21	Check that all s	tud bolt threads have been cleaned and lubi	ricated with the appropriate			1/	
22	Check and ensi thread (3mm) b	ure that all stud bolts and nuts are hand tight	t ensuring that stud ends extend 1	V			
22	Check that all fl	anges and bolts have been prepared and project specifications	e-assembled in accordance with	/		-	
24	Check and ensu	are that all bolts have been torqued to 1/3 of	the final torque value and ensure	/			
25		ire that all bolts have been torqued to 2/3 of	the final torque value and ensure	V			
26	Check and ensu ensure correct s	are that all bolts have been torqued to 100% sequence	of the final torque value and	1/			
Commen		Florged Correction o	~ Esthant spool				
		Trades Person	Supervisor			Field Er	ng or QA/QC
rint Na	me:	(ARE) HOL ACTION	ANDER HANIGO	_	1.	177	1 6 2 16 18
ign:		Q THOMAS	Λ	0	Dean Moffett		
ıte:		SERT 15/2019	11 21-131.20	19	12-	Sep- 19	1

Construction Inspection Sheet CIS-60-017 Piping Thermal Insulation



	Tag No:		Project N	lo:	38	04 BIM N	MEIP	
(Sub)System:	Effluent Line	Are	ea:	800	Man Can	an Pad	
Des	scription:	Effluent Dischause Use			000	Iviali Cali	ip гац	
1000	Separate Separate	Effluent Discharge Line	Drawir	BACKLING PLANS	Marie III			
	CWP:	3804-021	CLIEN	IT: BAFFII	NLAND IR	ON MIN	IES, Baffin Island	
Item	Description	41 3150		Yes	No	N/A	Comments and Data	
1	General							
2	Pipe tested an	d final inspection done 🕒 Serve	Test-	V				
3		rts and horizontal cradles				/		
4	Pipe painting of					V		
5	Material weight	tor						
6	Tracing:							
	06a - Electrical			V				
	06b - Steam					/		
	06c - Heat tran				,	V		
7	Expansion bar	nds		V				
8	Beveled ends					11		
9	Temporary sup	ports and blind flanges removed				/		
10		per specification		1/				
11	Inspection - Ins	sulation Materials						
12	Proper Materia			1/				
13	Verify insulation	n materials are free from damage		1/				
14	Verify insulation	n materials shelf-life has not expired		./				
15	Insulation, dry							
16	Insulating Hot F					الا		
17	Proper materia	thickness used		-		V		
18	Flanges, flange	d valve bodies, bonnets and flanged fitting	gs insulated			./		
19	Minimum clear	ances between insulation and adjacent su	ırfaces			/		
20	45 degrees to v	ertical runs properly supported			P 200	/		
21		i0 °F shall be in two layers				1		
22	Joints staggere	d and proper wire ties						
23	Expansion joint	s spacing horizontal runs correct				1/		
24	Proper clearand	ce at flange breaks				V		
25	Tubing properly	insulated				V		
26	Proper use of fi	ller and/or mastic materials	"			1/		
27	Inspection - Ins	ulation Cold Piping		./				
28	Proper material	thickness used						
29	Proper insulation	n of attachments		1				
30	Contraction join	ts at specified intervals				1/		
31		iameter at supports						
32	45 degrees to v	ertical runs properly supported				1		
33	Proper use of jo	ints sealer for single and multiple layer ap	plications		1	1		
34	Proper taping of			1/				
35	Proper use of fil	ller materials, sealer and/or vapor barriers		1/				
		atherproofing Hot Piping				./		
		eather proofing mastic at fittings				1		
38	Proper banding	of metal jacket				V		
		Trades Person	Supervi	sor		Field E	ng or QA/QC	
Print Na	Print Name: Agas Towaruse A			J	Dean Moffett			
Sign:		0	1/10 00	ADIO	Q ~	Topo	-	
ate:		SERT 15/2019	11 Sept 11	1,2019	12	-Sep-	19	

Construction Inspection Sheet CIS-60-017 Piping Thermal Insulation



	Tag No:	0	Project No:		38	04 BIM N	MEIP
(Sub)System:	Effluent Line	Area:		800	Man Cam	ip Pad
Des	cription:	Effluent Discharge Line	Drawing:			0	
	CWP:	3804-021	CLIENT:	BAFFINL	AND IR	ON MIN	ES, Baffin Island
Item	Description			Yes	No	N/A	Comments and Data
39	Proper use of "S"	clips on vertical runs	163	110	IN/A	Comments and Data	
40		etal screw spacing				-	
41		ld on vertical vessels					
42		atherproofing Cold Piping		12	1	75	
43		oor barrier mastic paint jacketing				-	
44	No use of screws	on cold work except on standing seam system	ms			-	-
45	Inspection - Rem		- V	-			
46	Proper stenciling	or tagging for identification			-	-	
Comme							

	n:	Supervisor	Field Eng or QA/QC
Print Name:	JAZES FOLSENES	Augus Haver	Dosa Maffett
Sign:	0	MA DE ADIO	10 mont
ate:	SEPT 15/2019	1 Sept 11, 2019	12-Sep-19

Construction Test Sheet CTS-60-014 Fusion Bonding Equipment Log



		100 M	- 6 - 10 - 10 - 10 - 10					200	Action to the last		No. of the last				
	TAG:		SAILIIVI	IK EFFLU	ENT LINE			Pro	oject No			CX0	01-3804	-MEIP	
(Sub)	System:		WASTE \	NATER D	ISCHARO	SE .		100	Area				MINE SI	TE	
Des	cription:	3"	HDPE DR	11 INSU	LATED PI	PING			Drawing		H3530	04-1000	0-240-27	72-0001-0	0001, R1
	CWP:		38	04- CVR	-021				CLIENT				- 10 W - 17 C	ON MINI	
Item	Description										Yes	No	N/A	1	nents and Data
1	Description of Fus	e Equipm	ent: Trac	k Star- Pit	Bull 412		166								ichts and Data
2	Machine No: Uni		i-										5-00%		
3	Model No: AT121 Serial No: C80844		1907												
4	Serial No: C80844		7		-	_	Tax see	l ti	l m	T	_		1	1	
	DATE	Clamps, heater plate, facer, and moveable carriage are aligned	Pipe lift and roller lubricated and good condition	All jaw inserts are in good condition	Heater plate surface in good condition (non-stick coated surface that is free	Heater plate built-in thermometer in good condition	A calibrated thermometer is available for checking heater plate temperature.	Hydraulic oil reservoir is filled to correct level	Hydraulic hoses and cylinders are free of leaks and in good condition.	Facer unit is in good operating condition (chain adjusted per	Facer Blades are in good operating condition (blades project between	Brake is in good operating condition	Tires/Tracks are in good condition	All Components actuated and fuction normally	Initials
100			71-11-1		i Presi			TEE S				N Elig	KALK	MEDICAL	DECEMBER 1
	./5/2018	٧	٧	٧	٧	٧	٧	٧	٧	٧	٧	NA	٧	٧	MM
	./6/2018	٧	٧	٧	√	٧	٧	٧	٧	٧	٧	NA	٧	٧	MM
	./7/2018	٧	٧	٧	٧	٧	٧	٧	٧	٧	٧	NA	٧	٧	MM
	/8/2018	٧	٧	٧	٧	٧	٧	٧	٧	٧	٧	NA	٧	٧	MM
	12/2019	٧	٧	٧	٧	٧	٧	٧	٧	٧	٧	NA	٧	٧	CD
	13/2019	٧	٧	٧	٧	٧	٧	٧	٧	√	٧	NA	٧	٧	CD
	14/2019	٧	٧	٧	٧	٧	٧	٧	٧	٧	٧	NA	٧	٧	CD
	16/2019	٧	٧	V	٧	٧	٧	٧	٧	٧	٧	NA	٧	٧	MM
3/	17/2019	٧	٧	٧	٧	٧	٧	٧	٧	٧	٧	NA	٧	٧	MM
3/	20/2019	٧	٧	٧	٧	٧	٧	٧	٧	٧	٧	NA	٧	V	MM
3/	21/2019	٧	٧	٧	٧	٧	٧	٧	٧	٧	٧	NA	٧	٧	MM
3/	22/2019	٧	٧	٧	٧	٧	٧	٧	٧	٧	V	NA	٧	٧	MM
3/	23/2019	٧	٧	٧	٧	٧	٧	٧	٧	٧	٧	NA	٧	V	MM
3/	28/2019	٧	٧	٧	٧	٧	٧	٧	٧	٧	٧	NA	٧	V	MM
4/	/3/2019	٧	٧	٧	٧	٧	٧	٧	٧	٧	٧	NA	٧	٧	JP
4/	/4/2019	٧	٧	٧	٧	٧	٧	٧	٧	٧	٧	NA	٧	V	JP
4/	/5/2019	٧	٧	٧	٧	٧	٧	٧	٧	٧	٧	NA	٧	٧	JP
			ALL AND												
	Trades Person							Si	uperviso	or	in the		Field	Eng or Q	A/QC
Print Na	rint Name: JANES POLACIEN							1		w Hamil	ton	Don	$\overline{}$	Laush	
Jn:								16		of Al	OCO	1	-	1	
Date:						/	of ADCO			2012					
Diller-	14/2019							10/10/2019 Of 12, doll			(0)0				

Construction Test Sheet CTS-60-014 Fusion Bonding Equipment Log



(Sub)System: WASTE WATER DISCHARGE Description: 3" HDPE DR11 INSULATED PIPING CWP: 3804- CVR-021 Item Description of Fuse Equipment: Track Star- Pit Bull 412 2 Machine No: UnNumbered- 3 Model No: AT1213001 4 Serial No: C30844 Description of Lese Equipment: Track Star- Pit Bull 412 Douglition of Lese Equipment: Douglition of Les	
Description: The complete carriage are in good operating condition (chain adjusted per	S
CWP: 3804- CVR-021 CLIENT: BAFFINLAND IRON MINE: Item Description 1 Description of Description	S
Item Description Descrip	
Description of Facer Date built-in thermometer is available of condition All Components actuated and froction Description of leaks are in good operating condition All Condition Description of Location Description of Location Description of Location All Condition Description of Facer Blades are in good operating condition All Condition Description of Facer Blades are in good operating condition Description of Location All Condition Description of Facer Blades are in good operating condition Description of Location All Condition Description of Facer Blades are in good operating condition Description of Location Description of Location All Condition Description of Facer Blades are in good operating condition All Condition Description of Facer Blades are in good operating condition All Condition Description of Facer Blades are in good operating condition All Condition Description of Facer Blades are in good operating condition All Condition Description of Facer Blades are in good operating condition All Condition Description of Facer Blades are in good operating condition All Condition Description of Facer Blades are in good operating condition All Condition Description of Facer Blades are in good operating condition All Condition Description of Facer Blades are in good operating condition All Condition Description Description	ents and Data
Model No: AT1513001 4 Secial No: C80844 Clamps, heater plate, facer, and moveable carriage are aligned moveable carriage are aligned condition Clamps, heater plate, facer, and moveable carriage are aligned condition Clamps, heater plate, facer, and moveable carriage are aligned condition All jaw inserts are in good condition A ealibrated thermometer in good condition A ealibrated thermometer is available for checking heater plate temperature. It is available for checking heater plate temperature. I hydraulic oil reservoir is filled to correct level A ealibrated thermometer in good condition. A certain good condition A condition (chain adjusted per plate sare in good operating condition (blades project between condition (blades broject	
All Components actuated and fuction All Compone	
Clamps, heater plate, facer, and moveable carriage are aligned condition All jaw inserts are in good condition Condition All jaw inserts are in good condition (non-stick coated surface that is free good condition (non-stick coated surface that is free Heater plate built-in thermometer in good condition A celibrated thermometer is available for checking heater plate temperature. Hydraulic oil reservoir is filled to correct level A celibrated thermometer is available for checking heater plate temperature. Hydraulic hoses and cylinders are free of leaks and in good condition. Facer unit is in good operating condition Condition (blades project between condition (chain adjusted per condition (blades project between condition (blades project between condition (blades project between condition) All Components actuated and fuction normally	
4/6/2019 V V V V V V V V V V NA V V A A/7/2019 V V V V V V V V V V V V V A A/8/2019 V V V V V V V V V V V V V V A A/8/2019 V V V V V V V V V V V V V V V V V V V	
4/6/2019 V V V V V V V V V V NA V V A A/7/2019 V V V V V V V V V V V V V A A/8/2019 V V V V V V V V V V V V V V A A/8/2019 V V V V V V V V V V V V V V V V V V V	Initials
4/8/2019 V V V V V V V V NA V V	JP
4/0/2010	JP
4/9/2019 V V V V V V V V V NA V V	JP
	JP
	STEEL STATE
	THE PARTY
AND CONTRACTOR OF THE PROPERTY	中国公司
Trades Deutstr	MARINE S 18 18 18 18 18 18 18 18 18 18 18 18 18
Trades Person Supervisor Field Eng or QA	/QC
Print Name: James Pourchard Andrew Hamilton Dort Dand.	
gn: of ADCO	
Date: Nov 14/2019 10/10/2019 2+ 18/2019	

Construction Test Sheet CTS-60-014 Fusion Bonding Equipment Log



MA A	TAG:	43	SAILIIV	IK EFFLUI	ENT LINE			Pro	oject No:			CXO	01-3804	-MEIP			
(Sub)System:		WASTE \	WATER D	ISCHARG	iΕ			Area:				MINE SI				
Des	cription:	3"	HDPE DR	11 INSUI	ATED PI	PING			Drawing:		H3530				0001. R1		
	CWP:			04- CVR					CLIENT:	Action in con-		Contract Contract	A 400 CO - 700 CO	ND IRON MINES			
Item	Description			TANDAGE SI PARINGE			With the second				Yes	No	N/A	T	ments and Data		
1	Description of Fu	se Equipm	ent: PitB	ull 14- Ma	nual Fusir	ng Mashir	ne		-		7.00		1	Com	neries and Data		
3	Machine No: 14 Model No: 43010	11	_														
	Serial No: C57864								-		_						
	DATE	Clamps, heater plate, facer, and moveable carriage are aligned	Pipe lift and roller lubricated and good condition	All jaw inserts are in good condition	Heater plate surface in good condition (non-stick coated surface that is free	Heater plate built-in thermometer in good condition	A calibrated thermometer is available for checking heater plate temperature.	Hydraulic oil reservoir is filled to correct level	Hydraulic hoses and cylinders are free of leaks and in good condition.	Facer unit is in good operating condition (chain adjusted per	Facer Blades are in good operating condition (blades project between	Brake is in good operating condition	Tires/Tracks are in good condition	All Components actuated and fuction normally	Initials		
4	THE REAL PROPERTY.				LEU I				TO THE		TO STORE	TO THE	NEW P	CHANGE OF THE PARTY.	initiais		
4,	/10/2019	٧	NA	٧	٧	٧	٧	NA	NA	٧	٧	NA	NA	٧	JP		
7,	/16/2019	٧	NA	٧	٧	٧	٧	NA	NA	٧	٧	NA	NA	٧	JP		
	SELLE PARTY																
WILL ZIN					Maril							EXTE	ii ee	P K	STATE AND ADDRESS.		
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	THE SERVENCE		(Prints)		HI SHEET		New York			HISTORY PARA							
a direction of				Mark Control	Variety.	2004	B(A)	50 B 35	24/24			RELIEF.	HE WAY	8,6524.0			
MANUE.	en paragraph		Name of			7275	1 11 40										
		Lucoul II	Tra	des Pers	on			C.	norde-				FIGURE :		14/00		
Print Na	ıme:	J	Poince					1	perviso Andrev	v Hamili	ton	Denl	711	Eng or C	A/QC		
,n:		0						ha	av sporezellet et i fil			4011	1	NI I			
Date:		7	1V	10/0	019		0f ADCO 2 10/10/2019 Oct 12 25			<u> </u>							
		IVO	V	170	.01		_/		1	10/10/2	013		OCI	18 00	04 1825		

Construction Test Sheet CTS-60-014 Fusion Equipment Heat Log



TAG:	SAILIIVII	K EFFLUENT LINE		Project No:		CX001-3804-	MEIP	
(Sub)System:	WASTE V	VATER DISCHARG	E	Area:		MINE SIT	E	
Description:	3" HDPE DR:	11 INSULATED PI	PING	Drawing:	H35300	04-10000-240-27	2-0001-0001. R1	
CWP:	380	04- CVR-021		CLIENT:	В	AFFINLAND IRC	ON MINES	
Item Description		117.00			Yes	No N/A	Comments and	
1 Use the Adjust he	ater plate temperat	ture if any individua	I temperature read	ding is more than +,	/- 25F from specifie	d heater plate tem	perature and reche	ck
	e temperature if th				ed heater plate ten	perature and rech	eck	
3 neater Plate Surfa	ce temperature Re	ading to be taken a	long the Pipe Radii	JS.	Lew Heater	10ab Hastan		
Fusing Equipment type	Machine No/ID	Date	Time of Day	Specified Heater Temp	Low Heater Plate Surface Temp	High Heater Plate Surfaace Temp	Fusion/Bonder Initials	
PitBull-Track Star 412	C80844	11/5/2018	10:36	400-450 F	> 400 F	< 450 F	MM	
PitBull-Track Star 412	C80844	11/6/2018	8:15	400-450 F	> 400 F	< 450 F	MM	MANAGE
PitBull-Track Star 412	C80844	11/7/2018	9:00	400-450 F	> 400 F	< 450 F	MM	
PitBull-Track Star 412	C80844	11/8/2018	10:12	400-450 F	> 400 F	< 450 F	MM	
PitBull-Track Star 412	C80844	3/12/2019	7:05	400-450 F	> 400 F	< 450 F	CD	
PitBull-Track Star 412	C80844	3/13/2019	9:36	400-450 F	> 400 F	< 450 F	CD	Pari
PitBull-Track Star 412	C80844	3/14/2019	10:55	400-450 F	> 400 F	< 450 F	CD	
nitBull-Track Star 412	C80844	3/16/2019	10:05	400-450 F	> 400 F	< 450 F	MM	
Bull-Track Star 412	C80844	3/17/2019	7:25	400-450 F	> 400 F	< 450 F	MM	
PitBull-Track Star 412	C80844	3/20/2019	7:45	400-450 F	> 400 F	< 450 F	MM	
PitBull-Track Star 412	C80844	3/21/2019	8:20	400-450 F	> 400 F	< 450 F	MM	
PitBull-Track Star 412	C80844	3/22/2019	10:00	400-450 F	> 400 F	< 450 F	MM	
PitBull-Track Star 412	C80844	3/23/2019	8:55	400-450 F	> 400 F	< 450 F	MM	
PitBull-Track Star 412	C80844	3/28/2019	8:19	400-450 F	> 400 F	< 450 F	MM	12.72
PitBull-Track Star 412	C80844	4/3/2019	7:46	400-450 F	> 400 F	< 450 F	JP	
PitBull-Track Star 412	C80844	4/4/2019	10:50	400-450 F	> 400 F	< 450 F	JP	TAXA I
PitBull-Track Star 412	C80844	4/5/2019	7:40	400-450 F	> 400 F	< 450 F	JP	
PitBull-Track Star 412	C80844	4/6/2019	9:15	400-450 F	> 400 F	< 450 F	JP	
PitBull-Track Star 412	C80844	4/7/2019	10:18	400-450 F	> 400 F	< 450 F	JP	
PitBull-Track Star 412	C80844	4/8/2019	7:40	400-450 F	> 400 F	< 450 F	JP	I DOWN
PitBull-Track Star 412	C80844	4/9/2019	7:05	400-450 F	> 400 F	< 450 F	JP	
PitBull 14-Manual	14	4/10/2019	9:39	400-450 F	> 400 F	< 450 F	JP	
PitBull 14-Manual	14	7/16/2019	8:05	400-450 F	> 400 F	< 450 F	JP	
					SHIP PAR	Notific III		
SAME WELDER			LA MASSIMELE					
23467	Trac	des Person		Superviso	r	Field E	ng or QA/QC	
Print Name:	J. POLACE	iren		Andrev	v Hamilton	11111	austi.	
;n:	0-			h	of ADCO	1		
Date:	NOV 14	/2019			.0/10/2019	De	18,209	
	1		1		150	201	122-1-1	





	TAG: SAILIIVIK EFFLUENT LINE Sub)System: WASTE WATER DISCHARGE					Project No:		CX001-3804	-MEIP	
(Sub)System:	WASTE	WATER DISCHARG	SE .		Area:		MINE SIT	ΓE	
Des	scription:	3" HDPE DE	R11 INSULATED PI	PING		Drawing:	H3530	004-10000-240-27		1
	CWP:		04- CVR-021			CLIENT:	110000	BAFFINLAND IRC		
Item	Description						Yes	No N/A	Comments a	nd Data
1	•	se Equipment: PitB	ull 14		-		1 103	110 111/A	Comments a	nu Data
2	Machine No: 14									
3	Model No: 43010									
4	Serial No: C57864		management and a second second				120			
5 6	Notes:	S High Density Poly	Ethelene -DR11							
0	ASSESSED FOR THE PROPERTY OF T	es are planed their	allignment shall no	t evened	10% off	set in the vertical or	harizontal avia			
	6b) The Melt shal	be 1/8 to 3/16 of	an inch before the I	Heat Pad	is remove	ed and Fusion Pressi	re is applied			
						cool down period.	ле із арріїец.			
			hall be above half				0.50			-1-7/
Joint	Identification	Drag P	Interfacial P	Fus	ion P	Soak Time	Pad Temp	Cooling Time	Date	Initial
	1.1	NA	75 PSI	41	PSI	1:30min	400°-450°	>3:30min	5-Nov-18	MM
	1.2	NA	75 PSI	41	PSI	1:30min	400°-450°	>3:30min	5-Nov-18	MM
	1.3	NA	75 PSI	41	PSI	1:30min	400°-450°	>3:30min	5-Nov-18	MM
	1.4	NA	75 PSI	41	PSI	1:30min	400°-450°	>3:30min	5-Nov-18	MM
1.5		NA	75 PSI	41	PSI	1:30min	400°-450°	>3:30min	5-Nov-18	MM
	1.6	NA	75 PSI	41	PSI	1:30min	400°-450°	>3:30min	5-Nov-18	MM
	1.7	NA	75 PSI	41	PSI	1:30min	400°-450°	>3:30min	5-Nov-18	ММ
	1.8	NA	75 PSI	41	PSI	1:30min	400°-450°	>3:30min	5-Nov-18	MM
	1.9	NA	75 PSI	41	PSI	1:30min	400°-450°	>3:30min	5-Nov-18	ММ
	2.1	NA	75 PSI	41	PSI	1:30min	400°-450°	>3:30min	5-Nov-18	MM
	2.2	NA	75 PSI	41	PSI	1:30min	400°-450°	>3:30min	5-Nov-18	ММ
	2.3	NA	75 PSI	41	PSI	1:30min	400°-450°	>3:30min	6-Nov-18	MM
	2.4	NA	75 PSI	41	PSI	1:30min	400°-450°	>3:30min	6-Nov-18	ММ
	2.5	NA	75 PSI	41	PSI	1:30min	400°-450°	>3:30min	6-Nov-18	MM
	2.6	NA	75 PSI	41	PSI	1:30min	400°-450°	>3:30min	6-Nov-18	MM
	2.7	NA	75 PSI	41	PSI	1:30min	400°-450°	>3:30min	6-Nov-18	MM
	2.8	NA	75 PSI	41	PSI	1:30min	400°-450°	>3:30min	6-Nov-18	MM
	2.9	NA	75 PSI	41	PSI	1:30min	400°-450°	>3:30min	6-Nov-18	MM
	3.1	NA	75 PSI	41	PSI	1:30min	400°-450°	>3:30min	6-Nov-18	MM
	3.2	NA	75 PSI	41	PSI	1:30min	400°-450°	>3:30min	6-Nov-18	MM
	3.3	NA	75 PSI	41	PSI	1:30min	400°-450°	>3:30min	6-Nov-18	ММ
	3.4	NA	75 PSI	41	PSI	1:30min	400°-450°	>3:30min	6-Nov-18	MM
	3.5	NA	75 PSI		PSI	1:30min	400°-450°	>3:30min	6-Nov-18	MM
	3.6	NA	75 PSI	41	PSI	1:30min	400°-450°	>3:30min	7-Nov-18	
		Tra	ides Person			Superviso	or	Field I	ng or QA/QC	
Print N	ame:	JARRED	POLACURA			Andrev	v Hamilton	Devel &	Jendy.	
_ó n։	997.47	0-	_							
)ate:	3100	NOV 1	4/200			/ /		12.4	1820	N.
a suggestion	ame:	JAMES NOV 1	14/2019		/	/m	of ADCO 10/10/2019	Desel &	18,201	?



(Sub)System:	MACTEL					o: CX001-3804-MEIP					
	WASTE	WATER DISCHARG	iE .		Area:		MINE SIT	ΓE			
Description:	3" HDPE DR	11 INSULATED PI	PING		Drawing:	H3530	04-10000-240-27	2-0001-0001. R:	1		
CWP:	380	04- CVR-021			CLIENT:	[BAFFINLAND IRC	ON MINES			
Item Description						Yes	No N/A	Comments a	nd Data		
1 Description of Fus	e Equipment: PitBı	ull 14	112.00	775							
2 Machine No: 14	gan maka						1000				
3 Model No: 43010								.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
4 Serial No: C57864 5 Material Type: IPS		Ethologo DD11	-								
6 Notes:	High Density Poly	Ethelene -DKII			100000		-				
	s are planed, their	allignment shall no	exceed	a 10% off:	set in the vertical or	horizontal axis.	17810				
6b) The Melt shall	be 1/8 to 3/16 of a	an inch before the H	leat Pad	is remove	d and Fusion Pressi	ure is applied.	7.55	-600			
6c) Once Fusion Pr	ressure is applied,	the jig is to be locke	d for a 9	00 second	l cool down period.		- W.S				
		hall be above half									
Joint Identification	Drag P	Interfacial P		ion P	Soak Time	Pad Temp	Cooling Time	Date	Initial		
3.7	NA	75 PSI		PSI	1:30min	400°-450°	>3:30min	7-Nov-18	MM		
3.8	NA	75 PSI	41	PSI	1:30min	400°-450°	>3:30min	7-Nov-18	MM		
3.9	NA	75 PSI	20,00	PSI	1:30min	400°-450°	>3:30min	7-Nov-18	MM		
4.1	NA	75 PSI	41	PSI	1:30min	400°-450°	>3:30min	7-Nov-18	MM		
4.2			PSI	1:30min	400°-450°	>3:30min	7-Nov-18	MM			
4.3	NA	75 PSI	41	PSI	1:30min	400°-450°	>3:30min	7-Nov-18	MM		
4.4	4.4 NA		41	PSI	1:30min	400°-450°	>3:30min	7-Nov-18	MM		
4.5	4.5 NA 75 PSI 41		PSI	1:30min	400°-450°	>3:30min	8-Nov-18	MM			
4.6	NA	75 PSI	41	PSI	1:30min	400°-450°	>3:30min	8-Nov-18	ММ		
4.7	NA	75 PSI	41	PSI	1:30min	400°-450°	>3:30min	8-Nov-18	MM		
4.8	NA	75 PSI	41	PSI	1:30min	400°-450°	>3:30min	8-Nov-18	ММ		
4.9	NA	75 PSI	41	PSI	1:30min	400°-450°	>3:30min	8-Nov-18	ММ		
5.1	NA	75 PSI	41	PSI	1:30min	400°-450°	>3:30min	8-Nov-18	ММ		
5.2	NA	75 PSI	41	PSI	1:30min	400°-450°	>3:30min	8-Nov-18	MM		
5.3	NA	75 PSI	41	PSI	1:30min	400°-450°	>3:30min	8-Nov-18	MM		
5.4	NA	75 PSI	41	PSI	1:30min	400°-450°	>3:30min	8-Nov-18	MM		
5.5	NA	75 PSI	41	PSI	1:30min	400°-450°	>3:30min	8-Nov-18	MM		
5.6	NA	75 PSI	41	PSI	1:30min	400°-450°	>3:30min	8-Nov-18	MM		
5.7	NA	75 PSI		PSI	1:30min	400°-450°	>3:30min	12-Mar-19	CD		
5.8	NA	75 PSI	41	PSI	1:30min	400°-450°	>3:30min	12-Mar-19	CD		
5.9	NA	75 PSI		PSI	1:30min	400°-450°	>3:30min	12-Mar-19	CD		
6.1	NA	75 PSI		PSI	1:30min	400°-450°	>3:30min	12-Mar-19	CD		
6.2	NA	75 PSI		PSI	1:30min	400°-450°	>3:30min	12-Mar-19	CD		
6.3	NA	75 PSI		PSI	1:30min	400°-450°	>3:30min	12-Mar-19	CD		
	Tra	des Person			∆ Supervisor			Eng or QA/QC	00		
Print Name:	JAZED POL	La cuil			Andrev	v Hamilton	10	Jendi			
տո։	92				of ADCO						
Date:	nov 19	/2019		/		10/10/2019	C	od 18, 20	7.5		





	TAG:	SAILIIVI	K EFFLUENT LINE		Project No: CX001-3804-MEIP					
(Sub)	System:	WASTE \	WATER DISCHARG	GE .	Area:		MINE SI	TE		
Desc	cription:	3" HDPE DR	11 INSULATED PI	PING	Drawing:	H3530	004-10000-240-2	72-0001-0001. R	1	
	CWP:	380	04- CVR-021		CLIENT:		BAFFINLAND IR		Salari.	
Item	Description			HIII)		Yes	No N/A	Comments a	nd Dat	
1	Description of Fus	se Equipment: PitBı	ull 14			1,03	110 11/14	Comments a	ilu Dai	
2	Machine No: 14	1107								
-	Model No: 43010	1000		- 101000	1725	100000				
10000	Serial No: C57864	SO					100			
	Notes:	S High Density Poly	Ethelene -DR11					- Wileyan		
	0011200000000	s are planed their	allignment shall no	t evreed a 10% off	set in the vertical or	harizantal avis				
	6b) The Melt shal	be 1/8 to 3/16 of a	an inch before the I	Heat Pad is remove	d and Fusion Pressi	re is applied			-	
					cool down period.	ле із арріїса.		3		
	6d) The valley o	f the fused joint s	hall be above half	the height of the	final fuse bead.	- 275	1916		th-	
Joint	Identification	Drag P	Interfacial P	Fusion P	Soak Time	Pad Temp	Cooling Time	Date	Initia	
	6.4	NA	75 PSI	41 PSI	1:30min	400°-450°	>3:30min	12-Mar-19	CD	
	6.5	NA	75 PSI	41 PSI	1:30min	400°-450°	>3:30min	12-Mar-19	CD	
	6.6	NA	75 PSI	41 PSI	1:30min	400°-450°	>3:30min	12-Mar-19	CD	
1	6.7	NA	75 PSI	41 PSI	1:30min	400°-450°	>3:30min	12-Mar-19	CD	
	6.8	NA	75 PSI	41 PSI	1:30min	400°-450°	>3:30min	12-Mar-19	CD	
	6.9	NA	75 PSI	41 PSI	1:30min	400°-450°	>3:30min		-	
	7.1	NA	75 PSI			_		12-Mar-19	CD	
75 (1)	7.2	27,502,55	UK-SPORTWIND	41 PSI	1:30min	400°-450°	>3:30min	12-Mar-19	CD	
		NA	75 PSI	41 PSI	1:30min	400°-450°	>3:30min	12-Mar-19	CD	
	7.3	NA	75 PSI	41 PSI	1:30min	400°-450°	>3:30min	13-Mar-19	CD	
	7.4	NA	75 PSI	41 PSI	1:30min	400°-450°	>3:30min	13-Mar-19	CD	
	7.5	NA	75 PSI	41 PSI	1:30min	400°-450°	>3:30min	13-Mar-19	CD	
	7.6	NA	75 PSI	41 PSI	1:30min	400°-450°	>3:30min	13-Mar-19	CD	
	7.7	NA	75 PSI	41 PSI	1:30min	400°-450°	>3:30min	13-Mar-19	CD	
	7.8	NA	75 PSI	41 PSI	1:30min	400°-450°	>3:30min	13-Mar-19	CD	
	7.9	NA	75 PSI	41 PSI	1:30min	400°-450°	>3:30min	13-Mar-19	CD	
	8.1	NA	75 PSI	41 PSI	1:30min	400°-450°	>3:30min	13-Mar-19	CD	
	8.2	NA	75 PSI	41 PSI	1:30min	400°-450°	>3:30min	14-Mar-19		
The same	8.3	NA	75 PSI	41 PSI	1:30min	400°-450°	>3:30min		CD	
-	8.4	NA	75 PSI	41 PSI	1:30min	400°-450°	>3:30min	14-Mar-19	CD	
7 100	8.5	NA NA	75 PSI	41 PSI		400°-450°		14-Mar-19	CD	
	8.6	NA NA			1:30min		>3:30min	14-Mar-19	CD	
7.11			75 PSI	41 PSI	1:30min	400°-450°	>3:30min	14-Mar-19	CD	
	8.7	NA	75 PSI	41 PSI	1:30min	400°-450°	>3:30min	14-Mar-19	CD	
-25	8.8	NA	75 PSI	41 PSI	1:30min	400°-450°	>3:30min	14-Mar-19	CD	
	8.9	NA	75 PSI	41 PSI	1:30min	400°-450°	>3:30min	14-Mar-19	CD	
		Tra	des Person		Superviso	or	Field	Eng or QA/QC		
rint Na	ime:	JARES 1	Lorscurk		Andrev	v Hamilton	Deule &	Houst.		
₋₆ n։	7700	Ch			1/h	of ADCO		<		
Date: Nov 14/2019					10/10/2019 02 18, 2019					



TAG: SAILIIVIK EFFLUENT LINE Project No: CX001-3804-MEIP			MEIP						
(Sub)System:	WASTE \	WATER DISCHARG	E	Area:		MINE SIT	E		
Description:	3" HDPE DR	11 INSULATED PI	PING	Drawing:	H3530	04-10000-240-27	2-0001-0001, R1		
CWP:	38	04- CVR-021	W. 1911 1910 114 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115	CLIENT:		BAFFINLAND IRC			
Item Description			7.00		Yes	No N/A	Comments ar	nd Data	
1 Description of Fu	ise Equipment: PitBi	ull 14				1.77	oonments a	ia bata	
2 Machine No: 14							-32.50		
3 Model No: 4301						-			
4 Serial No: C5786	The second secon					1000			
5 Material Type: IP 6 Notes:	S High Density Poly	Ethelene -DR11	NO.						
	es are planed, their	allignment shall not	exceed a 10% offe	set in the vertical or	horizontal axis		10000		
6b) The Melt sha	II be 1/8 to 3/16 of	an inch before the H	leat Pad is remove	ved and Fusion Pressure is applied.					
6c) Once Fusion I	Pressure is applied,	the jig is to be locke	d for a 900 second	cool down period.				-	
	of the fused joint s	hall be above half	the height of the	final fuse bead.		-16		or and the second	
Joint Identification	Drag P	Interfacial P	Fusion P	Soak Time	Pad Temp	Cooling Time	Date	Initial	
9.1	NA	75 PSI	41 PSI	1:30min	400°-450°	>3:30min	14-Mar-19	CD	
9.2	NA	75 PSI	41 PSI	1:30min	400°-450°	>3:30min	14-Mar-19	CD	
9.3	NA	75 PSI	41 PSI	1:30min	400°-450°	>3:30min	14-Mar-19	CD	
9.4	NA	75 PSI	41 PSI	1:30min	400°-450°	>3:30min	14-Mar-19	CD	
9.5	NA	75 PSI	41 PSI	1:30min	400°-450°	>3:30min	14-Mar-19	CD	
9.6	NA	75 PSI	41 PSI	1:30min	400°-450°	>3:30min	16-Mar-19	MM	
9.7	NA	75 PSI	41 PSI	1:30min	400°-450°	>3:30min	16-Mar-19	MM	
9.8	NA	75 PSI	41 PSI	1:30min	400°-450°	>3:30min	16-Mar-19	MM	
9.9	NA	75 PSI	41 PSI	1:30min	400°-450°	>3:30min	16-Mar-19	ММ	
10.1	NA	75 PSI	41 PSI	1:30min	400°-450°	>3:30min	16-Mar-19	MM	
10.2	NA	75 PSI	41 PSI	1:30min	400°-450°	>3:30min	17-Mar-19	MM	
10.3	NA	75 PSI	41 PSI	1:30min	400°-450°	>3:30min	17-Mar-19	MM	
10.4	NA	75 PSI	41 PSI	1:30min	400°-450°	>3:30min	17-Mar-19	ММ	
10.5	NA	75 PSI	41 PSI	1:30min	400°-450°	>3:30min	17-Mar-19	MM	
10.6	NA	75 PSI	41 PSI	1:30min	400°-450°	>3:30min	17-Mar-19	ММ	
10.7	NA	75 PSI	41 PSI	1:30min	400°-450°	>3:30min	20-Mar-19	MM	
10.8	NA	75 PSI	41 PSI	1:30min	400°-450°	>3:30min	20-Mar-19	ММ	
10.9	NA	75 PSI	41 PSI	1:30min	400°-450°	>3:30min	20-Mar-19	MM	
11.1	NA	75 PSI	41 PSI	1:30min	400°-450°	>3:30min	21-Mar-19	MM	
11.2	NA	75 PSI	41 PSI	1:30min	400°-450°	>3:30min	21-Mar-19	MM	
11.3	NA	75 PSI	41 PSI	1:30min	400°-450°	>3:30min	21-Mar-19	MM	
11.4	NA	75 PSI	41 PSI	1:30min	400°-450°	>3:30min	21-Mar-19	MM	
11.5	NA	75 PSI	41 PSI	1:30min	400°-450°	>3:30min	21-Mar-19	MM	
11.6	NA	75 PSI	41 PSI	1:30min	400°-450°	>3:30min	21-Mar-19	MM	
	Tra	ides Person		Superviso	or		ng or QA/QC		
Print Name:	PAREN 1	POLACHER		Andrev	v Hamilton	Dorle C.	Dawsii		
.gn:	2				of ADCO		17		
Date:	NOV 1	1/2019		/ / 0	10/10/2019	oct	18,2019		



	TAG:	SAILIIVI	K EFFLUENT LINE			Project No:		CXO	01-3804-	MEIP	
(Sub)System:	WASTE \	WATER DISCHARG	SE.		Area:			MINE SIT	F	
Des	scription:		11 INSULATED PI			Drawing:	Hara				
	CWP:			PING		A CONTRACTOR OF THE PARTY OF TH	11000.			2-0001-0001. R:	1
2.00	I The second	38	04- CVR-021			CLIENT:		BAFFINLAND IRON MINES			
Item	Description						Yes	No	N/A	Comments a	nd Data
2	Machine No: 14	se Equipment: PitB	ıll 14								
3	Model No: 4301	01	-				11116				
4	Serial No: C5786	75.745	17.00								-
5	Material Type: IP	S High Density Poly	Ethelene -DR11								
6	Notes:		2000			188			-40		
		es are planed, their								1000	
		ll be 1/8 to 3/16 of					ire is applied.				
		Pressure is applied, of the fused joint s								10 = 10 = 10	
loint	Identification	Drag P	Interfacial P	Fusio		Soak Time	Pad Temp	Coolin	a Time	Data	In the state of
John	11.7	NA	75 PSI	411		1:30min	400°-450°		g Time	Date	Initia
	11.8	NA NA	75 PSI	41			13.5	>3:30	5000000	22-Mar-14	JH
-	11.9	74 TOTAL TOT	2004 5002			1:30min	400°-450°	>3:30		22-Mar-14	JH
		NA	75 PSI	411		1:30min	400°-450°	>3:30	0.000.000	22-Mar-14	JH
-	12.1	NA	75 PSI	411		1:30min	400°-450°	>3:30	min	22-Mar-19	JH
	12.2	NA	75 PSI	41 F	PSI	1:30min	400°-450°	>3:30)min	22-Mar-19	JH
	12.3	NA	75 PSI	41 [PSI	1:30min	400°-450°	>3:30	min	22-Mar-19	JH
	12.4	NA	75 PSI	41 F	PSI	1:30min	400°-450°	>3:30	min	23-Mar-19	JH
	12.5	NA	75 PSI	41	PSI	1:30min	400°-450°	>3:30	min	23-Mar-19	JH
	12.6	NA	75 PSI	41 F	PSI	1:30min	400°-450°	>3:30	min	23-Mar-19	MM
	12.7	NA	75 PSI	41 F	PSI	1:30min	400°-450°	>3:30)min	23-Mar-19	MM
	12.8	NA	75 PSI	41 F		1:30min	400°-450°	>3:30		23-Mar-19	MM
	12.9	NA	75 PSI	41 F		1:30min	400°-450°	>3:30			
	F.1	NA	75 PSI	41 F		1:30min	400°-450°			23-Mar-19	MM
	F.2		1073877/0867		100	200000000000000000000000000000000000000		>3:30		4/3/2019	JP
Star P		NA	75 PSI	41 F		1:30min	400°-450°	>3:30		4/3/2019	JP
	F.3	NA	75 PSI	41 F		1:30min	400°-450°	>3:30	min	4/4/2019	JP
	F.4	NA	75 PSI	41 F	PSI	1:30min	400°-450°	>3:30	min	4/4/2019	JP
	F.5	NA	75 PSI	41 F	PSI	1:30min	400°-450°	>3:30	min	4/4/2019	JP
	F.6	NA	75 PSI	41 F	PSI	1:30min	400°-450°	>3:30	min	4/5/2019	JP
	F.7	NA	75 PSI	41 F	PSI	1:30min	400°-450°	>3:30	min	4/5/2019	JP
	F.8	NA	75 PSI	41 F	PSI	1:30min	400°-450°	>3:30		4/5/2019	JP
	F.9	NA	75 PSI	41 F	PSI	1:30min	400°-450°	>3:30		4/6/2019	JP
	F.10	NA	75 PSI	41 F		1:30min	400°-450°	>3:30		4/6/2019	JP
	F.11	NA	75 PSI	41 F		1:30min	400°-450°	>3:30		4/7/2019	JP
T. F.M.	F.12	NA	75 PSI	41 F		1:30min	400°-450°	>3:30		4/7/2019	JP
			des Person			↑ Superviso	The second second	75.50		ing or QA/QC	J.P
Print Na	ame:		2			1	v Hamilton	Den	0	Lewsli.	
.gn:	A SALAR SALA	JARED 1	ELBURN			Andrev		Perl	1	Jen sei	
		9	- 1-			10	of ADCO	_	16		
Date:		NOU!	14/2019		/	7 1	10/10/2019	C) of 1	8,2019	





TAG: SAILIIVIK EFFLUENT LINE		Project No:		CX001-3804-MEIP						
(Sub)	System:	WASTE	WATER DISCHARG	GE		Area:		MINE SIT	Έ	
Desc	cription:	3" HDPE DR	R11 INSULATED PI	PING		Drawing:	H3530	04-10000-240-27	2-0001-0001. R:	1
	CWP:	38	04- CVR-021			CLIENT:	E	BAFFINLAND IRC	ON MINES	
Item	Description	N-2					Yes	No N/A	Comments a	nd Data
1	Description of Fu	ıse Equipment: PitB	ull 14							22231223133
2	Machine No: 14					- 2	5 123		71.53	
	Model No: 4301				5.199					1// 20-
5	Serial No: C5786	⁴ ² S High Density Poly	Etholono DP11		19-35			-		
6	Notes:	3 High Density Poly	Ctileletie -DKII							
		es are planed, their	allignment shall no	t exceed	a 10% off	set in the vertical or	horizontal axis.			
	6b) The Melt sha	II be 1/8 to 3/16 of	an inch before the I	Heat Pad	is remove	d and Fusion Pressu	re is applied.			
		Pressure is applied,								
		of the fused joint s				final fuse bead.				
Joint	Identification	Drag P	Interfacial P		ion P	Soak Time	Pad Temp	Cooling Time	Date	Initia
	F.13	NA	75 PSI	41	PSI	1:30min	400°-450°	>3:30min	4/7/2019	JP
	F.14	NA	75 PSI	41	PSI	1:30min	400°-450°	>3:30min	4/8/2019	JP
	F.15	NA	75 PSI	41	PSI	1:30min	400°-450°	>3:30min	4/8/2019	JP
	F.16	NA	75 PSI	41	PSI	1:30min	400°-450°	>3:30min	4/8/2019	JP
	F.16	NA	75 PSI	41	PSI	1:30min	400°-450°	>3:30min	4/8/2019	JP
ell'y di	F.17	NA	75 PSI		PSI	1:30min	400°-450°	>3:30min	4/9/2019	JP
	F.18	NA	75 PSI		PSI	1:30min	400°-450°	>3:30min	THE RESERVE TO SERVE	JP
A THE	F.19	NA	75 PSI	100	PSI	1:30min	400°-450°	>3:30min	4/9/2019	_
	F.20	NA	75 PSI		PSI	100000000000000000000000000000000000000	All the Alesta	THE RESIDENCE OF THE PARTY OF T	4/9/2019	JP
14/41/20	111111111111111111111111111111111111111				117-12-3970	1:30min	400°-450°	>3:30min	4/9/2019	JP
	F.21	NA	75 PSI		PSI	1:30min	400°-450°	>3:30min	4/9/2019	JP
	F.22	NA	75 PSI		PSI	1:30min	400°-450°	>3:30min	4/9/2019	JP
	H.1	Manual	Manual	Ma	nual	1:30min	400°-450°	>3:30min	4/10/2019	JP
	H.2	Manual	Manual	Ma	nual	1:30min	400°-450°	>3:30min	4/10/2019	JP
	H.3	Manual	Manual	Ma	nual	1:30min	400°-450°	>3:30min	4/10/2019	JP
	H.4	Manual	Manual	Ma	nual	1:30min	400°-450°	>3:30min	4/10/2019	JP
	H.5	Manual	Manual	Mai	nual	1:30min	400°-450°	>3:30min	4/10/2019	JP
	H.6	Manual	Manual	Mai	nual	1:30min	400°-450°	>3:30min	4/10/2019	JP
1111	Y.1	Manual	Manual		nual	1:30min	400°-450°	>3:30min	7/16/2019	JP
	Y.2	Manual	Manual		nual	1:30min	400°-450°	>3:30min		JP
700	Y.3	Manual	Manual		nual	1:30min	400°-450°	>3:30min	7/16/2019	
	Y.4	Manual	Manual		nual	1:30min	400°-450°		7/16/2019	JP
	Y.5	Manual	Manual		nual		272100 DE 201701800	>3:30min	7/16/2019	JP
						1:30min	400°-450°	>3:30min	7/16/2019	JP
	Y.6	Manual	Manual	IVIai	nual	1:30min	400°-450°	>3:30min	7/16/2019	JP
		Tra	ides Person			Superviso	or.	Field	ing or QA/QC	
rint Na	ame:	-	OCA CHELL			A	v Hamilton	Deroll	Ing or QAYQC	
.gn:		DARED T	- TI MIEN			Anurev	of ADCO	Telell	Shudi	
ate:		1	ah-	//		1/5	20 10	0.1	100 100	
utc.		Nou	14/10/9		/		10/10/2019	Oct	18 209	

Construction Inspection Sheet CIS-75-019 Control Valves



	Tag No: Sailiivik Effluent Line Isolation Valve	Project No:		1150	3804-MEI	P				
(Sub)	System:	Area:	Effluent Discharge Line							
Desc	cription: 3 CS -HDPE Ball Valve 150LB	Drawing:			NA					
	CWP: 3804-021	CLIENT:	BAFFINLAND IRON MINES, Baffin Island							
Item	Description		Yes	No	N/A	Comments and Data				
1	General Data		1		.,,	Commence and Data				
2	Drawing No:									
3	Specification No:				-					
4	Inspection			,						
5	Valve according to data sheet.		1/							
6	Record Serial Number.				V					
	No external damage.		1/							
8	Position, flow direction and orientation correct.		1/							
9	Labelling correct.			/						
10	Position/Booster correctly installed.		1/							
11	Flange bolts tight.		1/							
12	Correct gasket.				1/					
13	Air supply to actuator installed.				1/					
14	Check if valve can be removed for service.		1/							
	Tag No. visible and correct.			1/						
16	Functional Test completed. Refer to calibration certifcate or Supplie	er's calibration certificate	/							
	(as applicable).									
17										
Tag No:	Description	Comments								
						2000				
Comme	nts:									
						A STATE OF THE STA				
						1				
	Trades Person	Supervisor			Field E	ng or QA/QC				
Print Na		Λ 1/		_	A. G					
	ame: CARED FOLACUER /	MOREM JANOZ	1	Dea	1 Mo	iffett				
``gn:	1/h	1.	2	Δ.	G D R 5					
	12 12 2	IN OF ADO				frs-				
ےate:	SEPT 15 2019 /1	Stat 121	7019	12-	Sep-1	٩				

Construction Inspection Sheet CIS-75-019 Control Valves



	Tag No: MSC Effluent Line Isolation Valve	Project No:		2	SOA ME	ID.				
(Sub)	System:	Area:	3804-MEIP							
				Effluen	t Discha	rge Line				
Desc	cription: 3 CS HDPE Ball Valve / SOLB	Drawing:			NA					
	CWP:	CLIENT: BA	AFFINL	AND IRO	AIM NC	ES, Baffin Island				
Item	Description		Yes	No	N/A	Comments and Data				
1	General Data				14/21	comments and Data				
	Drawing No:			-						
	Specification No:	* *								
	Inspection									
5	Valve according to data sheet.		V							
	Record Serial Number.				1/					
	No external damage.		V							
8	Position, flow direction and orientation correct.		V							
	Labelling correct.			1/						
10	Position/Booster correctly installed.		V							
	Flange bolts tight.		V							
	Correct gasket.				V					
	Air supply to actuator installed.				1/					
	Check if valve can be removed for service.		1							
	Tag No. visible and correct.			1						
16	Functional Test completed. Refer to calibration certificate or Suppl	lier's calibration certificate	-							
	(as applicable).									
	17 Components of Control Valve									
Tag No:	Description	Comments								
C										
Comme	nts:									
						Ï				
						1				
						1				
						1				
	Trades Person	Supervisor			Field F	ng or QA/QC				
rint Na	me: Man - M	11	-	-		ACTION OF A CHICAGO CONTROL CO				
	me: (MZE) YOLACHAR	JOREN HATINE		Dean	Mof	fett				
ign:		/		10 m	2/1					
Jate:	7	Man of ADGO			10/4					
rate.	Sher 15/2019	1 Sept 12,20	15	12-1	ep-1	9				



CanTorque Inc.

14635-119 Ave Edmonton, AB T5L 2N9 P (780)436-2000 F (780)732-0905 info@cantorque.com www.cantorque.com

Certificate of Calibration

Customer Name		#	041347114 -2
Customer Address	Adco Power		
Manufacturer Name	Edmonton, AB		
Model Number	Westward		
Serial Number	TWC12		
	041347114		
Asset Number	n/a		
Maximum Capacity	250 Lbf/ft		
Ratchet Drive Size	1/2"		
Required Accuracy	+/- 4%		
emperature °C	20.0		
ervice Technician			
nits of Measure	Mark MacNeil		
alibration Procedure	Lbf/ft		
- Control Procedure	OP-112		

Calibration Data - Minimum 5 Results at Each Checkpoint

20%	Torque Setting 50.00	Initial Readings as Found 49.48		Torque	Range	Readings After Adjustments
60%	150.00	149.94	48.00		52.00	
L00%	250.00	246.34	144.00		156.00	In-Spec In-Spec
		240.34	240.00	-	260.00	In-Spec

alibration Equipment Data

anufacturer Name	Norbar		
splay Model #	TTT 43228		
splay Serial #	63987		
ansducer Model #	50625.LOG		
ansducer Serial #	59562	Transducer Capacity	250 Lbf/ft
libration Date	08-Sep-16		230 [6]/1
insducer Accuracy	+/- 0.5%	Next Calibration Due	08-Sep-18

- e above described instrument has been calibrated in accordance with the customer's requirements
- d specifications using measurement equipment that is directly traceable to the NRC/Canada and/or
- : NIST/USA and applicable national standards.

ibration Date:	25 Nov 16 Tark 11 5	
	25-Nov-16 Technician Print/Signature:	
	Mort MacNoil Mart L March	. 💙
	11000	
	Form 110a Revis	on 2



This is to certify that

CARL DOERKSEN

has satisfactorily complete the courses neccessary to operate equipment, as noted on the reverse in compliance with ASTM F2620.

No:17292

JUNE 26, 2018 Date of Issue

_	OFERMIOR	MONTHUM
valitcalion valid for two years from the date of issue.	☐ Mini MC/1LC ☐ #2LC/2CU ☐ PB #14 ☐ PB #26 ☑ #28/T28/HP ☑ #412/T412/HP ☑ #618/T618 ☑ #7500 ☐ #824/T630 ☐ #1236/T900 ☐ #1648 ☐ #2065	☑ Datalogger ☐ Saddle Fusion ☐ Socket Fusion
**		

McELROY

This is To Certify That

Jared Polachek
Has Satisfactorily Completed The Courses:
As Noted On Reverse

Date MAY 8 - 2014

Nº 14725

BUTT FUSION

☐ Mini Mc/1LC

□ #2LC/2CU Ø #14PB

Ø #26

₩ #28/T28/HP

12 #412/T412/HP Ø #618/T618

₩T500

□ #824/T630

□ #1236/T900

□ #1648

□ #₂₀₆₅

₽ Datalogger

☐ Linetamer

☐ Saddle Fusion ☐ Socket Fusion

☐ Electrofusion 1/2" to 14"

☐ Electrofusion 16" to 28" ☐ Electrofusion Saddles

☐ Squeeze Tool Manual

Squeeze Tool Hydraulic ☐ Hot Tapping

OPERATOR QUALIFICATION

☐ Socket Fusion

- ☐ Mini MC/1LC ☐ #2LC/2CU ☐ PB #14

- ☐ PB #26
- ☑ #28/T28/HP ☑ #412/T412/HP ☐ Datalogger ☐ Saddle Fusion
- ₩618/T618 ₩T500
- □ #824/T630
- □ #1236/T900
- □ #1648 □ #2065



This is to certify that

MATT MANNETTE

has satisfactorily complete the courses neccessary to operate equipment, as noted on the reverse in compliance with ASTM F2620.

No:16994

OCTOBER 4, 2017 Date of Issue

Construction Inspection Sheet CIS-70-007 Low Voltage Cables (<1kV)





	Tag No: 1623-HTCP-001-P1B Project No: 3804-MEIP						IP .		
(Sub)System:	Saillivik Camp Services	Area:			Mine Sit			
Des	scription:	3c#6 1kV Teck Cable	Drawing:			NA			
	CWP:	C X 001	CLIENT:	Е	AFFINLA	AND IRC	ON MINES		
	Origin:	WTP-PDP1	Destination:		162	3-НТСР	-001		
Item	Description	- 8-		Yes	No	N/A	Comments and Data		
1	Cable number	red and marked correctly on both ends and tr	ansits	1/					
2	Cable size and			VI					
3		or installed and connected		1					
4		and enclosing systems satisfactory		V		1			
5	Confirm protec	ctive measures (kick plates) are fitted correct				V			
6		Cable clamps / ties size and type / sp	pacing correct	~					
7	Cable spacing	/ formation to engineering Instruction		V					
8		s is within manufacturer's recommendations		V					
9		ion completed satisfactorily		V					
10	Cable glands	size correct and tightened satisfactorily		V					
11	Ensure IP sea	ling washers have been fitted to gland, where	e required			1			
12		with area classification		/					
13		shrouding correct		V.					
14	Bedding correct			~	E .		·* · · · · · · · · · · · · · · · · · ·		
_15	Cable ends made up and terminated satisfactorily LV Cables Termination completed according to procedure. Attach separate LV Cable								
16	Termination Pr	ocedure sheet			/				
17	Cable lugs crin	nped and bolts tightened to correct torque rate	ting	/					
	Phase sequen	-							
19	Check that the and specification	earth bonding is correct and in accordance vons	1						
20	On single core	cables, ensure that the cables have been ea	arthed in accordance with the			~			
21	Continuity of or	of the approved project electrical drawings an	d specifications						
22	Cable armourin	arth conductor / screen / sheath okay		/					
22	Confirm that th	ng / sheath earthed at both ends							
23 24	Check that the	e cable routing and segregation is correct							
- 1	identification is revision of drav	ere is no damage to the cores, termination ch correct and that crimped fittings are satisfac-	amber layout is satisfactory, core tory. Cable terminated to latest	/					
23	the approved p	are cores and screens have been earthed ar roject drawings and specifications	nd conform to the requirements of			V			
26	Check that all e	enclosure covers have been replaced and no	halta ara missis -	/		-			
27	No unauthorise	d modifications	boits are missing	1					
		ance of installation satisfactory		~					
		k on conductors satisfactory		-	-				
Commer		- Control Control		V					
		Trades Person	Supervisor		0	Field E	ng or QA/QC		
Print Na	ime:	Murray Weir	Anoney Harrey		Deel	k Co	trash.		
Rign:		My lest	of Ao	0	-	1	2		
ate:		09-13-19	11 Od of 2010	2	0	ct	18,2019		

Construction Inspection Sheet CIS-70-007 Low Voltage Cables (<1kV)



A STATE	Tag No: 1623-HTCP-001-P1A		Project No:	Hida	3	804-ME	IP.	
(Sub	o)System: Sailiivik Camp Services		Area:					
Des						Mine Site		
II. A SHARE	JCHO INV TECH Capie	Emiles (a) Val	Drawing:		ALC: U	NA		
	CWP: C 001		CLIENT:	В	AFFINLA	AND IRC	N MINES	
	Origin: WTP-PDP1		Destination:		162	3-HTCP-	-001	
Item	Description			Yes	No	N/A	Comments and Data	
1	Cable numbered and marked correctly on both end	s and transits		V		Sist hars		
2	Cable size and type correct			V.	-X= = 54			
3	Earth conductor installed and connected			/				
4	Cable support and enclosing systems satisfactory			~				
5	Confirm protective measures (kick plates) are fitted		102			/		
6	Cable clamps / ties size and t	type / spacing cor	rect	V	7			
7	Cable spacing / formation to engineering Instruction			V				
8	Bending radius is within manufacturer's recommend	dations		V				
9	Cable installation completed satisfactorily			V				
10	Cable glands size correct and tightened satisfactori	ly		V				
11	Ensure IP sealing washers have been fitted to gland	d, where required	- 10°					
12	Glands comply with area classification			/				
13	Lockouts and shrouding correct			V				
14	Bedding correct							
_15	Cable ends made up and terminated satisfactorily							
16	LV Cables Termination completed according to proc Termination Procedure sheet			/	*			
17	Cable lugs crimped and bolts tightened to correct to	rauo ratina				-		
18	Phase sequence verified/checked		/					
19								
13	and specifications							
20	On single core cables, ensure that the cables have	been earthed in a	ccordance with the					
	requirements of the approved project electrical draw	ings and specification	ations			V		
21	Continuity of earth conductor / screen / sheath okay			/				
22	Cable armouring / sheath earthed at both ends			V				
23	Confirm that the cable routing and segregation is co	rrect		V	- 41			
24	Check that, there is no damage to the cores, terminal	ation chamber lay	out is satisfactory, core					
	identification is correct and that crimped fittings are revision of drawing.	satisfactory. Cabl	e terminated to latest	V		28		
		-0 1 7 -						
25	Confirm that spare cores and screens have been ea the approved project drawings and specifications	irtned and conform	n to the requirements of		4			
26	Check that all enclosure covers have been replaced	and no belle are		/			No.	
27	No unauthorised modifications	and no boits are	missing	V				
	Overall appearance of installation satisfactory			1		_		
	Continuity check on conductors satisfactory			V				
Comme				V				
							=	
	Trades Person		Supervisor			Field E	ng or QA/QC	
Print Na	ame: Murray Weis	1	Justen Ulan	106	Dorole	671	oud:	
Sign:	Dang two		1 OF ADE		-	1	V 201,	
ate:	09-13-19	1//	Ot 4, 2019		0	+ 17	8.205	

Construction Inspection Sheet CIS-70-007 Low Voltage Cables (<1kV)





Tag No:		1623-HT-L1-P1	MARKET	Project No:	3804-MEIP			ID.	
(Sub)System:				ALCOHOL: SERVICE HER					
		Sailiivik Camp Services		Area:	Mine Site			e	
Description: 3c#6 1kV Teck Cable-COLD LEAD			Drawing:	NA NA					
	CWP: CLIENT:			CLIENT:	BAFFINLAND IRON MINES				
	Origin:	1623-HTCP-001		Destination:	1623-HT-L1-JBX				
Item	Description	Description						Comments and Data	
1	Cable numbere	ed and marked correctly on both ends and tr		Yes	No	N/A	comments and Data		
2	Cable size and	type correct		/					
3									
4		and enclosing systems satisfactory			1				
5	Confirm protect	tive measures (kick plates) are fitted correct	tly				/		
6		Cable clamps / ties size and type / sp	pacing cor	rect	V	-			
7	Cable spacing /	formation to engineering Instruction			1/				
8	Bending radius	is within manufacturer's recommendations			V				
9		on completed satisfactorily			V				
10	Cable glands si	ze correct and tightened satisfactorily			/				
11	Ensure IP seali	ng washers have been fitted to gland, where	e required		-	_	~		
12	Glands comply	with area classification			./		~		
13	Lockouts and sl	hrouding correct			/				
14	Bedding correct				/				
_15	Cable ends mad	de up and terminated satisfactorily			~				
16	LV Cables Term	nination completed according to procedure.	Attach se	parate LV Cable		- 12			
X	Termination Procedure sheet								
17	Cable lugs crimped and bolts tightened to correct torque rating				~				
18	Phase sequence	/	***	-					
19									
	and specification	ns		and the second s	V				
20	On single core of	cables, ensure that the cables have been ea	arthed in a	ccordance with the					
	requirements of	the approved project electrical drawings an	d specific	ations			V		
		rth conductor / screen / sheath okay			1				
		g / sheath earthed at both ends			/				
23	Confirm that the	cable routing and segregation is correct	200		/				
24	Check that, then	e is no damage to the cores, termination ch	amber lay	out is satisfactory, core					
	identification is o	correct and that crimped fittings are satisfac	tory. Cabl	e terminated to latest	/				
	revision of drawi								
25	Confirm that spa	are cores and screens have been earthed a	nd conforr	n to the requirements of			/		
	the approved pro	oject drawings and specifications							
	Check that all er	nclosure covers have been replaced and no	bolts are	missing	1			**	
	No unauthorised				V				
		nce of installation satisfactory			V				
		on conductors satisfactory			/				
Commer	nts:								
								i	
	Trades Person Supervisor				Field Eng or QA/QC				
Print Na	ame:	Marston 11295	Λ	1	-	Tied Elig of QAYQC			
Sign:		Mung Wes	//	ANOREN HANCH		Della	Ved!	LSci	
-			1	M OF ADO	0	-	16	. ~ 3	
ate:		09-13-19	11 0 11 2019			(2,+	18 2019	

Construction Inspection Sheet CIS-70-007 Low Voltage Cables (<1kV)



Tag No: 1623-HT-L2-P1		Project No:		HA G	SOU ME	ID.			
(Sub)System: Sailiivik Camp Services			Area:	3804-MEIP					
Descriptions			Mine Site						
De	JOHO INV FEER CADIE-COLD LEAD Drawing.			NA NA					
	CWP: CLIENT:			BAFFINLAND IRON MINES					
	Origin: 1623-HTCP-001 Destination:				1623-HT-L2-JBX				
Item	Description	Description					N/A	Comments and Data	
1	Cable numbere		Yes	No	N/A	Comments and Data			
2	Cable size and	type correct			/				
3		r installed and connected			1			46	
4		and enclosing systems satisfactory	V						
5	Confirm protect	ive measures (kick plates) are fitted correct	tly				./		
- 6		Cable clamps / ties size and type / sp	pacing cor	rect	/		-		
_ 7	Cable spacing /	formation to engineering Instruction			V		17.5		
8		is within manufacturer's recommendations			1			107	
9		on completed satisfactorily			V				
10	Cable glands si	ze correct and tightened satisfactorily			V				
11	Ensure IP seali	ng washers have been fitted to gland, where	e required				V		
12	Glands comply	with area classification			/	_		16-1 W W	
13		hrouding correct			1				
14	Bedding correct								
15		de up and terminated satisfactorily							
16	LV Cables Term	nination completed according to procedure.	Attach se	parate LV Cable					
	Termination Pro								
17	Cable lugs crimped and bolts tightened to correct torque rating				V				
18	Phase sequence								
19	Check that the	earth bonding is correct and in accordance v	with the ap	proved project drawings					
	and specification	ns			V				
20	On single core of	cables, ensure that the cables have been ea	arthed in a	ccordance with the			/		
	requirements of	the approved project electrical drawings an	d specifica	ations			~		
21	Continuity of ear	rth conductor / screen / sheath okay			V				
22		g / sheath earthed at both ends			/				
23	Confirm that the	cable routing and segregation is correct			V			***************************************	
24	Check that, then	e is no damage to the cores, termination ch	amber lay	out is satisfactory, core			# = #5 ₁	· · · · · · · · · · · · · · · · · · ·	
	identification is o	correct and that crimped fittings are satisfac	tory. Cable	e terminated to latest	V				
	revision of drawi								
25	Confirm that spa	are cores and screens have been earthed a	nd conforn	n to the requirements of					
		oject drawings and specifications							
26	Check that all er	nclosure covers have been replaced and no	bolts are	missing	/				
150,000	No unauthorised				/				
28		nce of installation satisfactory			V				
		on conductors satisfactory			V				
comme	Comments:								
	Trades Person Supervisor						Field E	ng or QA/QC	
Print Na	ame:	M. 11)25-	10			1	(O		
Salt and		Muttay West	-/	Johnson Harry	W	berl	(he	ell'h fr	
Sign:		Many We	//	a pr ADCO			10		
ate:		09-13-19	/1					8,209	

Construction Inspection Sheet CIS-70-007 Low Voltage Cables (<1kV)





Tag No: 1623-HT-L1-C1		Project No:	3804-MEIP							
(Sub)System: Sailiivik Ca		Sailiivik Camp Services		Area:						
Description: 2P#16 1kV Teck Cable-RTD			Mine Site							
	21 #10 1KV TECK CADIE-KTD		Drawing:	NA NA						
	CWP: CX001			CLIENT:	BAFFINLAND IRON MINES					
	Origin: 1623-HTCP-001 Destination:				1623-HT-L1-PIPE RTD					
Item	Description				Yes	No	N/A	Comments and Data		
1	Cable number	red and marked correctly on both ends and tra	insits		/					
2	Cable size and				/					
3		or installed and connected	525		/					
4	Cable support	and enclosing systems satisfactory	~		1 3					
5	Confirm protec	ctive measures (kick plates) are fitted correctly				- "	/			
6		Cable clamps / ties size and type / spa	acing corr	ect	V					
7	Cable spacing	/ formation to engineering Instruction			/					
8	Bending radius	s is within manufacturer's recommendations					15			
9		ion completed satisfactorily								
10	Cable glands	size correct and tightened satisfactorily			V					
11	Ensure IP sea	ling washers have been fitted to gland, where	required				V			
12		y with area classification								
13		shrouding correct			/					
14	Bedding correct				/					
15	Cable ends ma	ade up and terminated satisfactorily								
16	LV Cables Termination completed according to procedure. Attach separate LV Cable Termination Procedure sheet									
17	Cable lugs crimped and bolts tightened to correct torque rating				-		/			
18	Phase sequen			-						
19	9 Check that the earth bonding is correct and in accordance with the approved project drawings									
	and specification	ons		20 20 20 20 20 20		11				
20	On single core	cables, ensure that the cables have been earl	thed in a	cordance with the			-			
g .	requirements of	of the approved project electrical drawings and	specifica	itions			~			
21	Continuity of ea	arth conductor / screen / sheath okay								
22	Cable armourir	ng / sheath earthed at both ends			V		-			
23	Confirm that th	e cable routing and segregation is correct								
24	Check that, the	ere is no damage to the cores, termination cha	mber lay	out is satisfactory, core						
	identification is	correct and that crimped fittings are satisfactor	ory. Cable	terminated to latest	~	- 1				
	revision of drav	ving.		1						
25	Confirm that sp	pare cores and screens have been earthed and	d conform	to the requirements of						
	the approved p	roject drawings and specifications			V					
	Check that all e	enclosure covers have been replaced and no b	oolts are r	missing						
		d modifications	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,							
		ance of installation satisfactory			/					
		k on conductors satisfactory			V					
Commer	nts:					411 30				
		Tardesp								
			Supervisor			Field E	ng or QA/QC			
		Mitoray Weir		Asna la	YUN	Deylo	69	Cust.		
Sign:		Vanny lea	/		0	_	1			
ate:		09-13-19	/	0	15	(Del 1	8,2019		

Construction Inspection Sheet CIS-70-007 Low Voltage Cables (<1kV)



1000	Tag No:								
		1623-HT-L1-C2		Project No:	3804-MEIP				
(Sub)System:		Saillivik Camp Services		Area:	Mine Site				
Des	Description: 2P#16 1kV Teck Cable-RTD Drawing:			Drawing:	NA				
	CWP: CLIENT:				BAFFINLAND IRON MINES				
	Origin: 1623-HTCP-001 Destination:				1623-HT-L1-AMBIENT RTD				
Item	Description	0.000			Yes	Comments and Data			
1	Cable number	ed and marked correctly on both ends and tra	ansits		/	No	N/A	Comments and Data	
2	Cable size and	type correct				-			
3		or installed and connected							
4		and enclosing systems satisfactory	-						
5	Confirm protective measures (kick plates) are fitted correctly								
6		Cable clamps / ties size and type / spa	acina corre	ct		_	~		
7	Cable spacing	/ formation to engineering Instruction	acing cone	CL					
8	Bending radius	is within manufacturer's recommendations			~				
9	Cable installati	on completed satisfactorily			V				
10		ize correct and tightened satisfactorily	_		V				
11	Ensure ID sool	ing weekers have been fitted to aller			V				
12	Clands sample	ing washers have been fitted to gland, where with area classification	required			-	V		
	Leakoute and a	with area classification			/				
13		hrouding correct							
14	Bedding correct				~				
_15	Cable ends ma	de up and terminated satisfactorily			/				
16	LV Cables Terr	mination completed according to procedure. A	Attach sepa	rate LV Cable	V				
	Termination Procedure sheet								
17	5 Service to conton torque rating						V		
18	Phase sequence verified/checked								
19	Check that the	earth bonding is correct and in accordance w	vith the app	roved project drawings			-		
	and specification	~							
20	On single core cables, ensure that the cables have been earthed in accordance with the								
	requirements of	the approved project electrical drawings and	d specificati	ions	- 1		V		
21	Continuity of ea	rth conductor / screen / sheath okay			./				
22	Cable armourin	g / sheath earthed at both ends			-				
23	Confirm that the	e cable routing and segregation is correct			V		102 3		
24	Check that, the	re is no damage to the cores, termination cha	amher lavor	ut is satisfactory core	V	_			
- 43	identification is	correct and that crimped fittings are satisfacted	tony Cable	terminated to letest					
	revision of draw	ing.	iory. Gable	terrimated to latest	V	1			
25		are cores and screens have been earthed and	d conform	to the services of 6					
1.00	the approved pr	oject drawings and specifications	ia comonn	to the requirements of	1				
26	Check that all e	nclosure covers have been replaced and no b	halta ara m	ianius -					
	No unauthorised		boils are m	issing	V				
		nce of installation satisfactory			V				
29	Continuity check	k on conductors satisfactory			1				
Comme		Con conductors satisfactory							
Comme	nts.								
	Trades Person A Supervisor		Supervisor	T	Field Eng or QA/QC				
Print Na	ame:	Murray Weir		Ame Horres	. /	Dere	1	Sha she	
Sign:		Home Cers		~ oz Ade		per	1	Jun ore	
ate:		09-13-19	1/ 1 Ost 4 2019			D+ 18 249			

Construction Inspection Sheet CIS-70-007 Low Voltage Cables (<1kV)





100	Tag No:	1623-HT-L2-C1		Project No:	3804-MEIP		IP			
(Sub)System:		Sailiivik Camp Services		Area:	Mine Site					
Description:		2P#16 1kV Teck Cable-RTD		Drawing:			NA			
	CWP: CX001			CLIENT:	BAFFINLAND IRON MINES					
	Origin: 1623-HTCP-001 Destination:					1623-HT-L2-PIPE RTD				
Item	Description				Yes	No	N/A	Comments and Data		
1		d and marked correctly on both ends and tr	ransits		/					
2	Cable size and		/							
3		r installed and connected			V					
4		and enclosing systems satisfactory	V							
_	5 Confirm protective measures (kick plates) are fitted correctly									
6		Cable clamps / ties size and type / sp	pacing corre	ect	V					
7	Cable spacing	formation to engineering Instruction			1/					
8	Bending radius	is within manufacturer's recommendations			V					
9		on completed satisfactorily			1/					
10		ze correct and tightened satisfactorily			1/					
11	Ensure IP seali	ng washers have been fitted to gland, where	e required							
12		with area classification			1/					
13		hrouding correct			/					
14	Bedding correct				V					
_ 15	Cable ends ma	de up and terminated satisfactorily	- 10							
16	LV Cables Tern	nination completed according to procedure.	Attach sep	arate LV Cable	-					
	Termination Pro	ocedure sheet		W	V		_			
17	Cable lugs crimped and bolts tightened to correct torque rating						1			
18	Phase sequenc	397 - 392 - 393	_		V					
19										
20										
	requirements of	the approved project electrical drawings an	nd specifica	tions		- 1	1			
21	Continuity of ea	rth conductor / screen / sheath okay								
22		g / sheath earthed at both ends			1/		$\overline{}$			
23	Confirm that the	cable routing and segregation is correct								
24	Check that, then	e is no damage to the cores, termination ch	namber lavo	out is satisfactory, core						
	identification is	correct and that crimped fittings are satisfac	ctory. Cable	terminated to latest	/					
	revision of draw	ing.			-					
25	Confirm that spa	are cores and screens have been earthed ar	nd conform	to the requirements of			_			
	the approved pr	oject drawings and specifications		*	0		- 1			
26	Check that all e	nclosure covers have been replaced and no	bolts are n	nissing	/					
27	No unauthorised	modifications			/					
28	Overall appeara	nce of installation satisfactory			/	-				
29	Continuity check	on conductors satisfactory			V					
Comme	Comments:									
Trades Person Supervisor			/ Supervisor /	Field Eng or QA/QC						
Print Na	ame:	Murray Weit	,	1 Ame Garios	7	Dor	CP.	Wy-sk.		
Sign:		Duran les	1	L OF ADE			TA	17		
ate:		09-13-19	01 4,200				PH 18 2019			

Construction Inspection Sheet CIS-70-007 Low Voltage Cables (<1kV)





	Tag No:	1623-HT-L2-C2	10,,10,1	Project No:	A Laboratory			CALL CONTRACTOR AND ADDRESS.
(Sub)System:	Sailiivik Camp Services		尼亚洲州南 州州市			3804-ME	IP
	scription:			Area:			Mine Sit	e
		2P#16 1kV Teck Cable-RTD		Drawing:			NA	
	CWP:	C X 001		CLIENT:		BAFFINL	AND IRC	ON MINES
	Origin:	1623-HTCP-001		Destination:				BIENT RTD
Item	Description				Yes	No	N/A	Comments and Data
1	Cable number	ered and marked correctly on both ends and tr	ransits			110	14/7	Comments and Data
2	Cable size a	nd type correct			N	-	1	
3	Earth conduc	ctor installed and connected			V	1	\vdash	
4	Cable suppo	rt and enclosing systems satisfactory			V			
5	Confirm prote	ective measures (kick plates) are fitted correct	tly				-/	
6		Cable clamps / ties size and type / sp	pacing corn	ect	1/	_	V	
_ 7	Cable spacin	g / formation to engineering Instruction			V			
8	Bending radio	us is within manufacturer's recommendations			V	_	\vdash	
9	Cable installa	ation completed satisfactorily			7			
10	Cable glands	size correct and tightened satisfactorily			V	_		
11	Ensure IP sea	aling washers have been fitted to gland, where	e required		V			
_12	Glands comp	ly with area classification	- required		-			
13	Lockouts and	shrouding correct	-		V			
14	Bedding corre	ect			V			
15	Cable ends m	nade up and terminated satisfactorily			V			
16	LV Cables Te	emination completed according to procedure.	Attach ass		~			
	Termination P	Procedure sheet	Allach sep	arate LV Cable	. /			
		mped and bolts tightened to correct torque rat	ting		V			
18	Phase sequer	nce verified/checked	ung				~	
19	Check that the	e earth bonding is correct and in accordance w	with the a					
	and specificat	ions						
20	On single core	e cables, ensure that the cables have been ea	rthed in ac	oordon on with the				
1	requirements	of the approved project electrical drawings and	d enecificat	cordance with the			1	
21	Continuity of e	earth conductor / screen / sheath okay	a specifical	lions			-	
22	Cable armouri	ng / sheath earthed at both ends			/			
23	Confirm that th	ne cable routing and segregation is correct			V			
24 (Check that, the	ere is no damage to the cores, termination cha			V			
i	dentification is	s correct and that crimped fittings are satisfact	amber layo	ut is satisfactory, core				
l r	evision of drav	wing	tory. Cable	terminated to latest	V			
t	he approved r	pare cores and screens have been earthed an project drawings and specifications	id conform	to the requirements of	/			
26	check that all	enclosure covers have been replaced and no			V			
27 N	o unauthorise	ed modifications	bolts are m	nissing	V			
		rance of installation satisfactory			~			
29 0	Continuity cher	ck on conductors satisfactory			V			
omment		cit on conductors satisfactory			V			
on men								
		Trades Person		Supervisor			Field F	01/0-
int Nar	ne:	Murray Weis	/	1 /			rieid En	g or QA/QC
gn:		MA CELL		1 June Han		Deili	Chic	Sent.
ate:		09-13-19	//	n or ADR	2	(11	12.0
		13 11	/ /	St 4, 2019		(21 1	18,2019

	Project			Scharebillendien					
Project Name			Davison Deference	The state of the s			Operating T	Operating Temperatures	
Location			Leading Reference				Maintenance Temperature	so.	o.
Designer			Panel Resulter Massiver				Min Controlled Temperature	LD.	ö
Project Number			The state of the s				Max Controlled Temperature	MIN	2
Job Number			Module				Meater Sheath Temperature	44	ņ
			A Park				Meater Sheath Temperature HI	N/A	ö
	24.000		Area Acchage				Uncontrolled Pipe Temperature	26	ņ
	Pipe & Insulation						Max Cable Temperature	122	ņ
Design Heat Loss	14.1	1007		Environment			200	Cable	
			min Ambient i emperature		50	ò	Cable Name	TEK 3C70-0J	
Pipe Length	2400		startup Amb remperature		A.	ņ	Design Cable Output	14.7	W/ (m
Pipe Size	i m	: 5	Max Ambient lemperature		32	ů	Nominal Operating Power	38907	N N
Pipe Type	HDPE DR11		Max Process lemperature		20	'n	Circuit Length	2400	E
Insulation Size	6.6		Area Charifforda		240	ņ	Total Cable	2400	2
Inner Insufation Thickness	N		TO THE CHARGE OF THE PARTY OF T		Ordinary		Nominal Operating Current	37,4	V
Inner Insulation Type	ā		2000		A/N		Total Maximum Current	55,3	٩
nner Insulation K Value	0.0289	Wien.	Tarrollancon remperature		N/A	ņ	Voltage	009	Vac
inner Insul Mean Temp	-20		Temperature Control		Pipe Sensing		Number Heater Sets	-	
Outer Insulation Thickness	N/N) 5	Miled Served		A/N	ņ	Trace Ratio Per Set	•	
Outer Insulation Type	N/A		pands print		9 (km/h	Spiral Pitch	A/A	E
Outer Insulation K Value	N/A	W/m-'C	Dan Carre		9	8	Circuit Breaker Size	20	
Outer Insul Mean Temp	N/A	٥							
Jacket Emissivity	0.12								
No. Valves 0 Valve Alfocation 0 m	No. Supports 0		No. Flanges	0	No. Pumps 0				
l	O THEORET STATE OF	101	riange Allocation	E	Pres Allocation	-			

20989 TEK 3C70-0J Series Constant Watt Heater with braid and overjacket		
מונים מופיא שונים האבו לפנים	chantity	antity
	2400.0	0.00

Cable Testing Report make additional copies as required for each circuit.

7	Customes	Contractor:	oden on core.
	Address: Mary River		TIOLO POWER
	Taly Aivel	_	8750 - 58 Ave Edmonton, AB
	Phone No:	Phone No.	TGE 666 780-465-3265
	Project Reference: CX001 MEIP		100 163 3 2 63
Re	ecord 1: Prior to Installation	_	
	Cable Type: Tek 3c 70		
	Reel Length: 1464	-	
	Reel Number: 2	. .	
	Insulation Resistance M Ohms: ∠ 550	-	
	Tested By: Chris Bys-	- Date:	01/09/2019
	Witnessed By: Kris Krahl	Date:	
Re	cord 2: After Installation of Heating Cable	7 8	
	Insulation Resistance M Ohms:		
	Heater Length: 1464	-	
	Heater Number: 2		
	Tested By: Kris Krahl	– Date:	03/10/2019
	Witnessed By: Chr. S Byar	Date:	03/10/2019
Re			
CT 7,9,11	Insulation Resistance M Ohms: Phase 2 > 2.2 6.7	Phase to phase	>2.2 G_ns
	Tested By: Jody Baera	Date:	09/09/19
	Witnessed By: Sam Cassar	Date:	09/09/10
Rec	cord 4: Final Commissioning		
	Panel Number: WTP -PD P1		
	Breaker Number:		
	Volts: 6000		
	Ambient Temperature (deg. €):5 ℃		
	Pipe Temperature (deg. 6): 20 C		
	Recorded Amps (After 5 Min.): 47 A		
	Tested By: Grant Fitz Gerald	Date:	Oct 4 7019
	Witnessed By: Andrew Hamilton	4.000 AND	Oct 4 2019
		, premioralati	5311

Cable Testing Report make additional copies as required for each circuit.

	Customer: Baffinland Iron mines	Contractor: Adro Power
	Address: Mary River	Address: 8750-58 Ave, Edmonton, A
		TGE GGG
	Phone No:	Phone No. 780-465-3265
	Project Reference: CXOL MEIP	
Re	ecord 1: Prior to Installation	
	Cable Type: Tek 3670	
	Reel Length: 1475	
	Reel Number: 4	
	Insulation Resistance M Ohms: ∠ 550	
	Tested By: Chris Bya-	Date: 09/01/20/9
	Witnessed By: Kris Krahl	Date: 09/61/20/9
Re	cord 2: After Installation of Heating Cable	
	Insulation Resistance M Ohms: < 550	
	Heater Length: 1475	
	Heater Number: 4	
	Tested By: Kroch	Date: 03/10/2019
	Witnessed By: Chr. S Bya C	Date: 03/10 / 2019
Re	cord 3: After The Thermal Insulation Is Installed	
T 1,3,5	All Phases to agreed >226	A
1	Tested By: Jody Baera	Date: 09/09/19
	Witnessed By: Sam Cassar	Date: 09/09/19
Red	cord 4: Final Commissioning	
	Panel Number: UTP-PDP1	
	Breaker Number:	
	Volts: 600 V	
	Ambient Temperature (deg. €):	
	Pipe Temperature (deg. 2: 20 C	
	Recorded Amps (After 5 Min.): 35.7 A	
	Tested By: Grant Fitzgeraid	Date: 014 4 2019
	Witnessed By: Andrew Han: 1ton	Date: oct 4 2019

Cable Testing Report
make additional copies as required for each circuit.

Customer: Baffin land Von mines	Contractor: Adro Power
Address: Mary Rover	Address: 8750-58 Ave Edmonton, AB
4.3	T66 666
Phone No:	Phone No. 780-465-3265
Project Reference: CKOOL MEIP	
Record 1: Prior to Installation	
Cable Type:	
Reel Length: 1478	
Reel Number:	
Insulation Resistance M Ohms: < 550	
Tested By: Chris Byar	Date: 01/09/2019
Witnessed By: Kris Krahl	Date: 0/09/2019
Record 2: After Installation of Heating Cable	
Insulation Resistance M Ohms: 4550	
Heater Length: 1478 C+	
Heater Number:	
Tested By: Krahl	Date: 03/10/2019
Witnessed By: Chr: S Byar	Date: 03/10/2019
Record 3: After The Thermal Insulation Is Installed	
Insulation Resistance M Ohms:	
Tested By:	Date:
Witnessed By:	Date:
Record 4: Final Commissioning	
Panel Number:	
Breaker Number:	Covered on privious
Volts:	Page Two ciccuite oc
Ambient Temperature (deg. F):	page. Two circuits or heat trace using 4 reess
Pipe Temperature (deg. F):	4 168
Recorded Amps (After 5 Min.):	
Tested By:	Date:
Witnessed By:	Date:
	Date:

Cable Testing Report

Customer: Baffinland Iron mines	
Address: Mary River	Address: 8750-58 Ave Edmenton, AB
	T66 666
Phone No:	Phone No. 780-465-3265
Project Reference: CXOOI MEIP	
Record 1: Prior to Installation	
Cable Type:	
Reel Length: 1482	
Reel Number: 2	
Insulation Resistance M Ohms: < SSO	
Witnessed By: Kris Krahl	Date: 01/01/2019
Witnessed By: Kris Krahl	Date: 01/09/2019 Date: 01/09/2019
Record 2: After Installation of Heating Cable	
Insulation Resistance M Ohms: 4550	
Heater Length: 1482	-
Heater Number: 3	_
Tested By: Kris Krahl	Date: 03/10/2019
Witnessed By: Chr. S Byour	Date: 03/10/2019
Record 3: After The Thermal Insulation is Installe	d
Insulation Resistance M Ohms:	
Tested By:	Date:
Witnessed By:	Date:
Record 4: Final Commissioning	
Panel Number:	
Breaker Number:	Covered on previous panes
Volts:	Two circuits of heat trace
Ambient Temperature (deg. F):	using 4 reels.
Pipe Temperature (deg. F):	
Recorded Amps (After 5 Min.):	
Tested By:	Date:
Witnessed By:	Date:
845	
The Host Breeing Specialists*	



Pre-Operational Inspection Sheet PTS-70-031 Heat Trace Circuit (C-Test)



	Tag No:	1623-HT-L2	Project No:		3804-MEIP			
(Sub)	System:	Effluent Line	Area:		Mine Site			
Desc	cription:	600V Heat Trace	Drawing:		NA NA			
	CWP:	CE001	CLIENT:		BAFFINLAND IRON MINES			
Item	Description	CE001	CEIEIVII	T				
1		ng installation complete.		Yes	No	N/A	Comments and Data	
2		its and warning labels fitted.				-		
		R test. (Min value = 10MW @ 500V)		V		_		
4		scription/Identification is correct						
5		CCD is fitted in the circuit. (Certification Re	equirement)	-		_		
6	Access Teacher Street Acc	nnections and MCB ratings against latest of	The second secon	1				
7	Confirm total in:	stalled tape length does not exceed manufa	acturer's instruction.					
8		lement resistance at distribution board.						
9	Carry out point	to point verification and earth loop resistan	ce check at last junction box	~				
10	Energize circuit	and confirm initial inrush current is accepta	able.	1/			REF	
		onsumption & Record Results:					ca J	
	11a - Phase L1						GTE	
		- Inrush Current (A):					007	
	11c - Phase L2 - C					-	GT/=	
		- Inrush Current (A):						
	11e - Phase L3 - Current (A): 474					aJP		
	11f - Phase L3 - Inrush Current (A):							
	11g - N - Currer		THE					
	11h - N - Inrush							
12	1.5W)	oop impedance at circuit extremities. (Max	value for 16A MCB Type C =					
		Current Device (RCCD) trip time at circuit e	extremities. (Trip within 200ms @					
	100% trip rating	tting and operation of thermostat controls.					7-0	
		ry heat output of tapes and confirm steady	-1-1-	/			451-	
	acceptable.	ry fleat output of tapes and confirm steady	state current after 1 hour is	V			CTF	
		perature is satisfactory at appropriate locat	ions.	2			GJE	
17	Compile red line	drawing changes where applicable.						
		values may be acceptable with approval of	Commissioning Engineer					
Comme	- Spare live - Disconcessed in Contal Paner.							
Orint No	amo:	Trades Person	Supervisor			1-2-1	ng or QA/QC	
rint Na	anne.	GRANT FIT WORKED	1 Sware la	who		umofi		
ign: Date:		Juliatio	In of ADW		10.	moor		
Date.		14/10/17	1 Oct 4,2010	1	15 -	Nov-1	9	

Pre-Operational Inspection Sheet PIS-70-015 Misc. Electrical Equipment

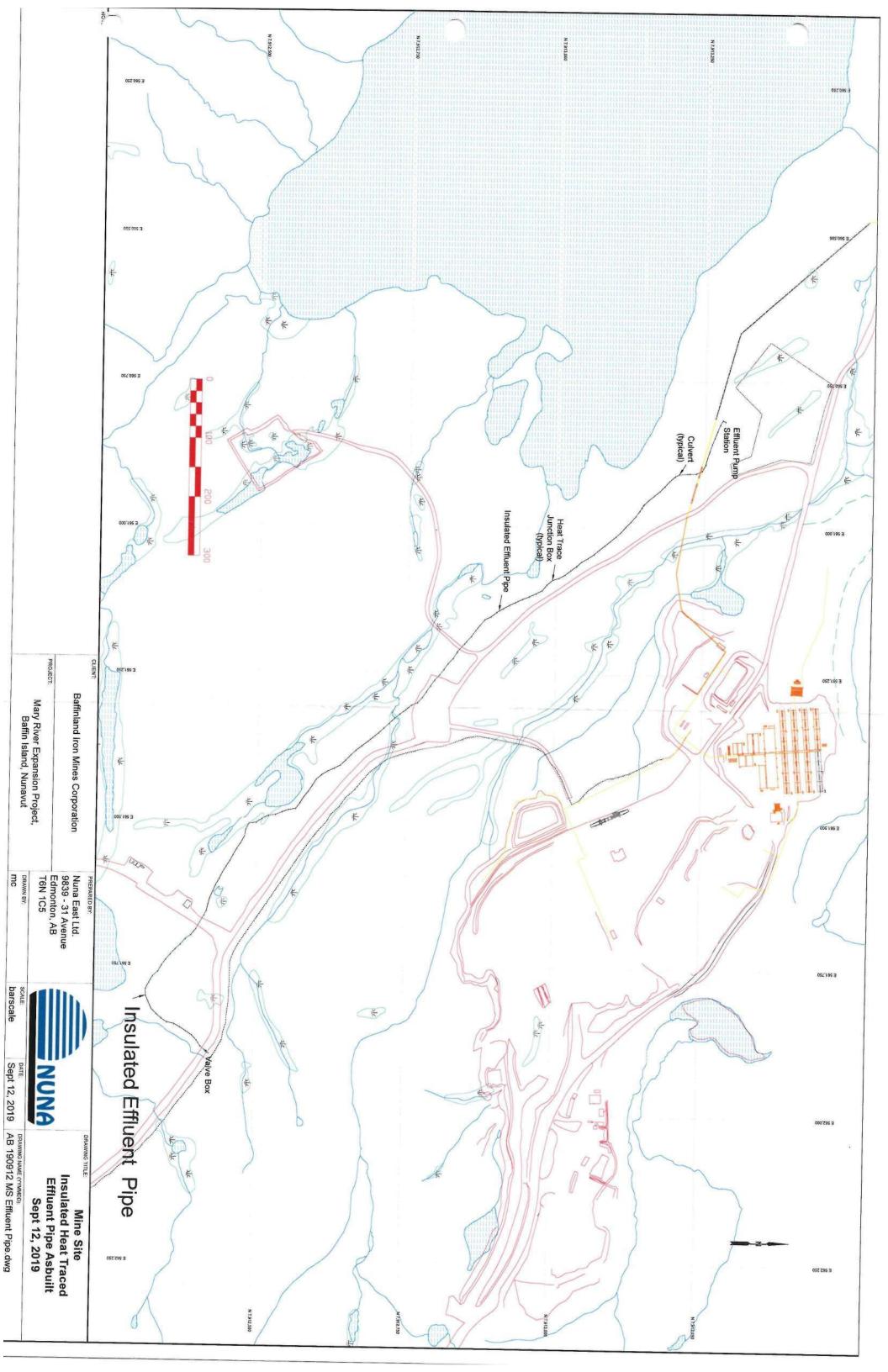


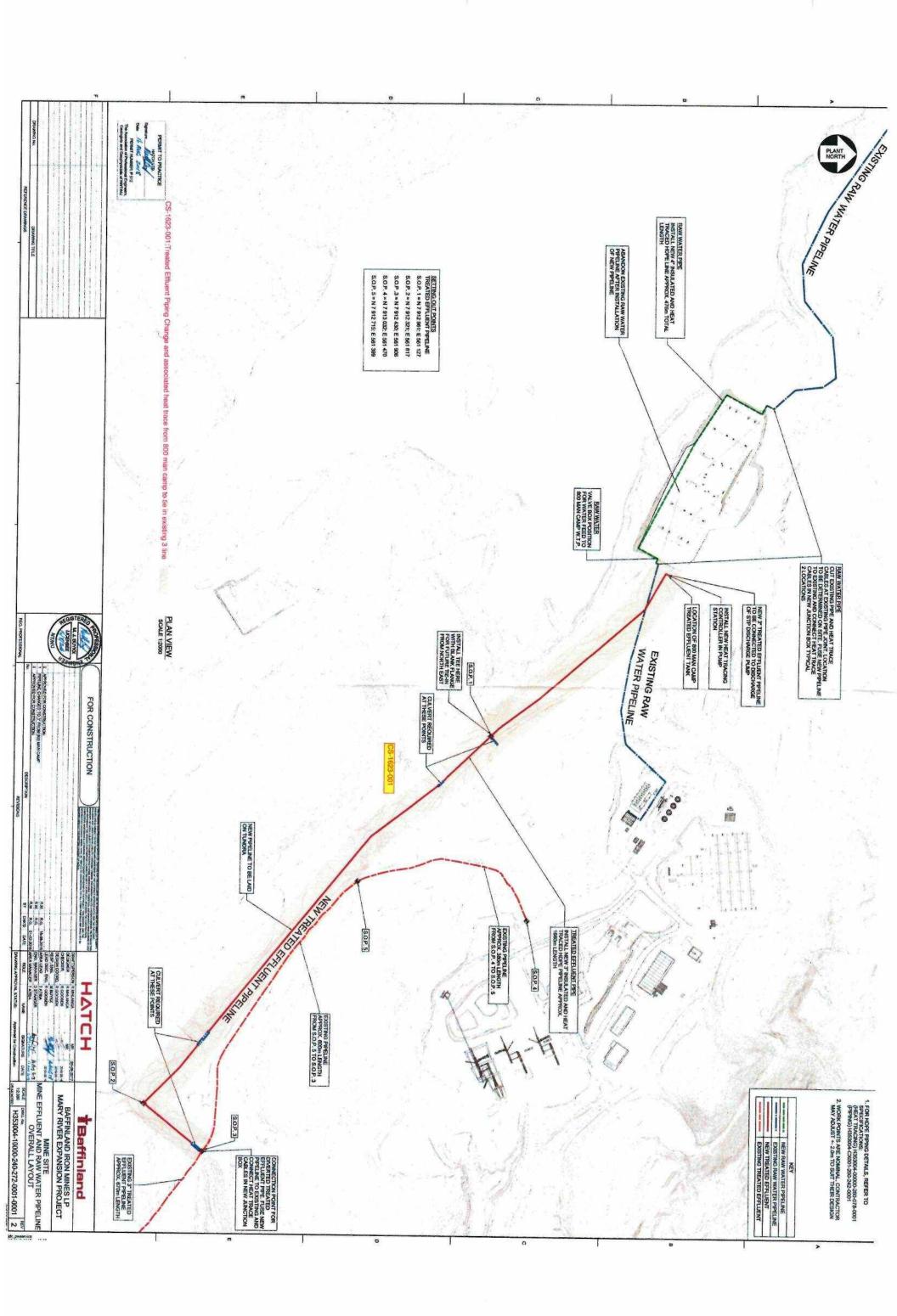
	Tag No:	Carlo Car						
		1623-HTCP-001		Project No:		3	804-ME	IP
(Sub))System:	Effluent Line		Area:			Mine Site	
Des	cription:	600V Heat Trace		Drawing:				
	CWP:	CE001		CLIENT:	1444 B. E.		NA	MEDICAL SHEET SHEET
Item	Description	CLOOT		CLILIVI.		AFFINLA	AND IRO	N MINES
1	General Data	11.	-11		Yes	No	N/A	Comments and Data
2	PO No:	Therew 600V	Drike	Heet Tree (maske		2	Zow
3	Type:		0					
4	Rating:	Never 4x						
5	Serial No:							
6	Model No:							
7	Style No:						-	
8	Inspection					-		
9		ompletion status						
	Preservation re				~			
11	Equipment clea				V			
12	Earthing correct	tly installed. Megger-test performed			1			
		tice (LUN) obtained			1			
	In Operation tag							
15	All safety require	ements satisfied						
16	Verify power cal	bles are complete, tight and correct phasin	ng.		~			
17	Check terminal	chambers are clean and free from dust and	nd moisture in	gress.	/			
18 19	Check insulation resistance of equipment power circuits. (Min value = 10 M·)							
20	Verify MCR / fue	ard cubicle number and labelling is correct.			/			
21	Function check	se ratings at feeder are correct for application	ion.		V			
22	Verify equipmen	feeder controls and Instrument Control Sys	stem (ICS) in	terfaces.	~			
	Energize and ful	at MCB / fuse ratings and relay settings are notion check equipment to manufacturer's	e correct.		~			
24	Measure live ear	rth loop impedance, if practical and safe to	instructions.		~			
25	Verify operation	of anti-condensation heater circuits.	0 do so.				V	
26	Verify operation	and settings of alarms and trips.					-	
27	Verify system Er	mergency Shutdown (ESD) trips and ICS in	nterfaces		+	\rightarrow	~	
28	Compile red line	drawing where applicable.	menaces.		-	_	~	
Commer					20.00			
Print Na	me:	Trades Person Murray Weir		Supervisor			(g or QA/QC
		Mustray Wers	1	Home March	~	tere	11	adler di
gn: Date:		09-13-19	1	Dut 4 70		15	1	Olia

Pre-Operational Inspection Sheet PTS-70-031 Heat Trace Circuit (C-Test)



	Tag No:	1623-HT-L1	Project No:		3	3804-ME	IP	
(Sub)	System:	Effluent Line	Area:			Mine Site	e	
Desc	cription:	600V Heat Trace	Drawing:			NA		
	CWP:	CE001	CLIENT:	BAFFINLAND IRON MINES				
Item	Description			Yes	No	N/A	Comments and Data	
1	Confirm claddin	g installation complete.		~				
2	Confirm entry ki	its and warning labels fitted.	- 1980 -		1000			
3	Post cladding IF	R test. (Min value = 10MW @ 500V)		V		ee.		
4		scription/Identification is correct						
5	Verify that an R	CCD is fitted in the circuit. (Certification Re	equirement)					
6		nnections and MCB ratings against latest d	A The Company of the Section of the	a. 🗸				
7	Confirm total ins	stalled tape length does not exceed manufa	acturer's instruction.					
8	Measure tape e	lement resistance at distribution board.						
9	Carry out point t	to point verification and earth loop resistand	ce check at last junction box					
10	Energize circuit	and confirm initial inrush current is accepta	able		-		196	
11	Check Power C	onsumption & Record Results:		-			W	
	11a - Phase L1	- Current (A): 35-7A				-		
8		- Inrush Current (A):						
	11c - Phase L2 - C							
	11d - Phase L2	- Inrush Current (A):					107	
	11e - Phase L3							
. 1		Inrush Current (A):						
	11g - N - Curren							
	11h - N - Inrush	Current (A):		-				
12	Measure earth lo 1.5W)	pop impedance at circuit extremities. (Max	value for 16A MCB Type C =					
13	Verify Residual 100% trip rating	Current Device (RCCD) trip time at circuit e	extremities. (Trip within 200ms @					
		etting and operation of thermostat controls.		V			ME	
0000A1		ry heat output of tapes and confirm steady	state current after 1 hour is		_		QJF	
	acceptable.	,	out out out and I hour to	/		l l	CTE	
		perature is satisfactory at appropriate locat	ions	/			CIF	
		drawing changes where applicable.				-	401	
18	Note: Lower IR v	values may be acceptable with approval of	Commissioning Engineer					
Ran Ban Low High Grow	nts: Index 1 corrent = 1 Corrent = 6 Corrent = 6 corrent = 6	=24.c Low temp nightemp 1/A 15A trip = 90mA	Alarm > 10.0 Trip = 90.0		,			
		Trades Person	Supervisor		1	Field E	ng or QA/QC	
`rint N	ame:	GRANT FETZGERAND	1 Avores los	she	tere		clisti	
્રાgn:		- Andrews	/pr 06 50			-	1	
Date:		14/10/19	1 Of 47012			10	12/19	









Baffinland Iron Mines LP - Mary River Expansion Project Construction Summary Report: Sailiivik Camp Effluent Line - April 15, 2020

Appendix C

Contact Information as per Components 1 and 2 of the Commercial Lease Requirement





Baffinland Iron Mines LP - Mary River Expansion Project Construction Summary Report: Sailiivik Camp Effluent Line - April 15, 2020

Company	Address	Contact Numbers
Hatch (Global Corporate Office)	Sheridan Science & Technology Park	Tel: 1-905-855-7600
(EPCM Contractor)	2800 Speakman Drive	Fax: 1-905-855-8270
	Mississauga, ON L5K 2R7 Canada	
Nuna East Limited	9839 – 31 Avenue NW	Tel: 1-780-434-9114
	Edmonton, AB T6N 1C5 Canada	Fax: 1-780-434-7758

Role	Name	Email
Preparer of Report	Glen Peace, P.Eng.	glen.peace@hatch.com
Responsible for Construction	Marlon Coakley	marlon.coakley@hatch.com
Baffinland Representative	Christopher Murray	Christopher.murray@baffinland.com

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Baffinland Iron Mines LP - Mary River Expansion Project Construction Summary Report: Sailiivik Camp Effluent Line - April 15, 2020

Appendix D

Map to Show Construction in Relation to Lease Boundaries and Water Bodies

