

District of Alberta  
Division No. 02 – Calgary  
Court No. 25-2679073  
Estate No. 25-2679073

Clerk's Stamp

COURT

QUEEN'S BENCH OF ALBERTA

JUDICIAL CENTRE

CALGARY

AND IN THE MATTER OF THE BANKRUPTCY AND INSOLVENCY  
ACT, RSC 1985, C B-3, AS AMENDED

MATTER

IN THE MATTER OF THE NOTICE OF INTENTION TO MAKE A  
PROPOSAL OF GREENFIRE OIL AND GAS LTD.

AND IN THE MATTER OF THE NOTICE OF INTENTION TO  
MAKE A PROPOSAL OF GREENFIRE HANGINGSTONE  
OPERATING CORPORATION

AND IN THE MATTER OF THE RECEIVERSHIP OF GREENFIRE  
HANGINGSTONE OPERATING CORPORATION

APPLICANT

BOOM CONSTRUCTION LTD.

DOCUMENT

**AFFIDAVIT**

ADDRESS FOR SERVICE AND CONTACT  
INFORMATION OF PARTY FILING THIS  
DOCUMENT

**Rose LLP**  
2100, 440 – 2<sup>nd</sup> Avenue S.W.  
Calgary, Alberta T2P 5E9  
Telephone: (403) 776-05  
Attention: Courtney Kachur and Elisa Stewart  
File No.: 10684-003

AFFIDAVIT OF RYAN MORSE

Sworn (or Affirmed) on May 6, 2021

I, Ryan Morse, of Calgary, Alberta, SWEAR AFFIRM AND SAY THAT:

1. I am the President of Boom Construction Ltd. ("**Boom**") and as such I have personal knowledge of the facts and matter hereinafter deposed to, except where stated to be based upon information and belief, in which case I verily believe the same to be true.
2. I am authorized to swear this Affidavit on behalf of Boom.

### Boom's Work for Greenfire

3. In or around August, 2019, Boom was engaged by Greenfire Oil & Gas Ltd. and Greenfire Hangingstone Operating Corporation (collectively, "**Greenfire**") to supply and deliver certain labour, materials, services and equipment (the "**Work**") in connection with the construction of an improvement to an oil and gas well or well site under various purchase orders issued under a Master Service and Supply Agreement, dated July 2019 (the "**Agreement**").
4. The Work was supplied to, performed on, and incorporated into an oil and gas well or well site legally described as 13-26-084-11-W4, and in respect of oil sands and petroleum lease number 072 728201AT70 (collectively, the "**Lands**") formed part thereof, and constituted an improvement to the same.
5. Greenfire requested that Boom provide labour, materials, tools, equipment, manpower and services for the completion of the Work and was at all times aware of, directed, authorized, acquiesced in and approved the Work as the same progressed and benefitted from the same.

### The Outstanding Invoices

6. As a result of the Work, Boom issued 13 invoices in accordance with the Agreement and in respect of the Work it performed on the Lands, to Greenfire (collectively, the "**Invoices**"), as set out below:

Invoice No.	Project	Date of Invoice	Amount of Invoice (\$)	Payments Made (\$)	Payment Date	Interest Owning as of August 12, 2020 (contractual interest at 2%) (\$)	Total Amount Owning (\$)
20180586	19145	2019-10-08	164,877.65	-	-	32,975.53	197,853.18
20180591	19145	2019-10-17	135,420.90	-	-	27,084.18	162,505.08
20180594	19146	2019-10-23	56,834.19	-	-	11,366.84	68,201.03
20180611	19138	2019-11-06	4,526.80	-	-	814.82	5,341.62
20180644	19190	2019-11-27	44,771.15	-	-	8,058.81	52,829.96
1129	20041	2020-04-01	91,706.75	87,339.76	2020-03-02	349.36	4,716.35
1054	20041	2020-04-02	79,252.55	79,252.55	2020-02-18	-	-
1034	20015	2020-03-11	9,091.02	747.45	2020-02-18	834.36	9,177.93
1130	2005	2020-08-12	2,433.23	-	-	(N/A)	2,433.23
20180582	19119	2019-10-08	42,881.27	42,881.27	2019-12-24	-	-
20180583	19119	2019-10-08	42,563.38	42,563.38	2020-01-10	-	-
20180587	19146	2019-10-08	47,467.74	47,467.74	2020-01-31	-	-
20180619	19170	2019-11-13	11,402.11	11,402.11	2019-12-24	-	-
<b>TOTAL:</b>							<b>503,058.37</b>



7. Attached as **Exhibit "A"** to this Agreement are copies of the Invoices.
8. Greenfire received and approved each of the Invoices.
9. The total amount owing on the Invoices, including contractual interest at the rate of 2% per month, equals \$503,058.37 (the "**Outstanding Amount**").

#### **The Builder's Lien**

10. On March 27, 2020, Boom filed a builders' lien with the Alberta Department of Energy, bearing registration number 2000801, in the amount of \$304,825.35 plus interest and costs, against the Lands and in relation to the Invoices (the "**Lien**"). Attached as **Exhibit "B"** to this Affidavit is a copy of the Lien.
11. At the time that the Lien was registered, the Work was ongoing.

#### **The Secured Claims Process**

12. On March 19, 2021, Boom submitted a Secured Proof of Claim (the "**Proof of Claim**") to Alvarez & Marsal Canada Inc. (the "**Receiver**"), in accordance with the Notice to Claimants (Secured Claims Procedure) provided to Boom by the Receiver (the "**Secured Claims Procedure Notice**"). The Proof of Claim states, among other things, that Boom holds a secured claim, as a result of the Lien, in the amount of \$304,825.35.
13. Attached as **Exhibit "C"** to this Affidavit is a copy of the Secured Claims Procedure Notice.
14. Attached as **Exhibit "D"** to this Affidavit a copy of the Proof of Claim.
15. On April 16, 2021, the Receiver served Boom with a Notice of Disallowance (the "**Notice**") stating that Boom's claim would be disallowed as a secured claim on the basis that the Lien was registered with Alberta Energy outside the 90 day prescribed period to register a builders' lien under section 41 of the *Builders' Lien Act*, RSA 2000, c B-7. Attached as **Exhibit "E"** to this Affidavit is a copy of the Notice.
16. Boom disputes the classification of its claim as an unsecured claim given that it continued to perform work for and at the request of Greenfire within 90 days before the date that the Lien was registered, being December 28, 2019 (the "**90 Day Period**").
17. Attached as **Exhibit "F"** to this Affidavit are copies of correspondence between Greenfire and Boom showing that the Work was ongoing within the 90 Day Period at the request of, and with the full knowledge of, Greenfire (the "**Correspondence**").
18. Specifically, Greenfire requested Boom to perform Work on the Lands which are the subject matter of the Lien in the attached correspondence, including but not limited to the following examples:
  - (a) February 10, 2020 – email from Greenfire (Travis Shield) to Boom (Kyle Scott) asking Boom to supply material, shop fabrication labour, and field install labour (see Exhibit F, Affidavit page 174);


- (b) February 21, 2020 – email from Greenfire (Jodi Boudreau) to Boom (Brett Hiebert) stating there is approval for the attached purchase order. The attached purchase order (PO# 201948, dated February 21, 2020) identifies the delivery location as 13-26-084-11W4, being the Lands (see Exhibit F, Affidavit pages 176–177);
- (c) February 25, 2020 and February 27, 2020 – emails from Greenfire (Travis Shield) to Boom (Brett Hiebert) regarding PO# 201906 (MOC-100) requesting welder from Boom to be on site during in relation to pile rig mobilization and install (see Exhibit F, Affidavits page 186);
- (d) March 12, 2020 – email from Greenfire (Travis Shield) to Boom (Brett Hiebert) in relation to MOC-100 fabrication stating that Greenfire would like to proceed with stress relief, hardness testing, and hydrotesting and asking Boom to move forward as planned with piping delivery to the Greenfire site (see Exhibit F, Affidavit page 328); and
- (e) March 18, 2020 email from Greenfire (Travis Shield) to Boom (Brett Hiebert and Kyle Scott) requesting shop fabrication and hauling for MOC 123 (see Exhibit F, Affidavit page 221).

Any one of the above requests by Greenfire establishes that Boom's lien is valid and was filed within the 90 Day Period, and further demonstrates that the Receiver's position in disallowing Boom's Proof of Claim is, respectfully, incorrect.

19. In addition, attached as **Exhibit “G”** to this Affidavit is a copy of the Boom’s payroll report detailing payroll records with respect to the Work requested by Greenfire, including, among other things, amounts for labour performed during the 90 Day Period (the **“Payroll Report”**).
20. As detailed in the Invoices, Correspondence, and Payroll Report, Boom continued to provide work on the Project during the 90 Day Period as part of the ongoing prevenient arrangement between Boom and Greenfire. Taken together, this evidence shows that Boom’s lien was validly filed in time for Work requested by Greenfire during the 90 Day Period. As a result, Boom’s lien should be declared valid and its Proof of Claim as a secured creditor should be allowed.

SWORN (OR AFFIRMED) BEFORE ME at the  
Calgary, Alberta, this 6<sup>th</sup> day of May, 2021

  
(A Commissioner for Oaths in and for Alberta)

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\_\_\_\_\_  
Ryan Morse  
)  
)

**ELISABETH J. STEWART**  
Barrister & Solicitor

This is Exhibit "A" referred to in the Affidavit of  
Ryan Morse, sworn before me this  
6th day of May, 2021.



A Commissioner for Oaths in and for the  
Province of Alberta

**ELISABETH J. STEWART**  
Barrister & Solicitor



Box 1379  
42A McCool Cres  
Crossfield, AB T0M 0S0

## Invoice

Invoice#: 20180586

Date: 10/08/2019

**Billed To:** Greenfire Hangingstone Operating Corporation  
1650, 444 - 5 Avenue SW  
Calgary AB T2P 2T8

**Project:** Greenfire Outage  
1650, 444 - 5 Avenue SW  
Calgary AB T2P 2T8

**Due Date:** 10/08/2019

**Terms:**

**Order#** 90048

Description	Unit	Quantity	Price	Amount
As per attached spreadsheet		1.0000	157,026.330000	157,026.33

Total:	157,026.33	Holdback:	0.00	Invoice Amount:	157,026.33
		GST Taxable:	157,026.33	GST:	7,851.32
		PST Taxable:	0.00	PST:	0.00
				Invoice Total:	164,877.65
				<b>Amount Due</b>	<b>164,877.65</b>

GST/HST Id#: 139628697RT0001

A service charge of 10 %  
per month will be charged on all amounts  
overdue on regular statement dates.

Thank you for your prompt payment!



Field Ticket No.	Field Ticket Date	Location	Total Billable (\$)
19145-016-0200	2019-09-26	13-26-084-11W4	\$2,782.38
19145-016-0201	2019-09-27	13-26-084-11W4	\$8,388.26
19145-016-0202	2019-09-28	13-26-084-11W4	\$13,678.49
19145-016-0203	2019-09-29	13-26-084-11W4	\$12,280.84
19145-016-0207	2019-09-29	13-26-084-11W4	\$3,422.04
19145-016-0209	2019-09-30	13-26-084-11W4	\$11,959.06
19145-016-0211	2019-10-01	13-26-084-11W4	\$11,959.06
19145-016-0212	2019-09-30	13-26-084-11W4	\$3,422.04
19145-016-0213	2019-10-01	13-26-084-11W4	\$3,422.04
19145-016-0214	2019-10-02	13-26-084-11W4	\$12,246.08
19145-016-0217	2019-10-02	13-26-084-11W4	\$3,422.04
19145-016-0218	2019-10-03	13-26-084-11W4	\$12,246.08
19145-016-0221	2019-10-03	13-26-084-11W4	\$3,422.04
19145-016-0222	2019-10-04	13-26-084-11W4	\$14,846.64
19145-016-0224	2019-10-04	13-26-084-11W4	\$4,691.72
19145-016-0225	2019-10-05	13-26-084-11W4	\$4,322.76
19145-016-0226	2019-10-05	13-26-084-11W4	\$14,846.64
19145-016-0228	2019-10-06	13-26-084-11W4	\$12,246.08
19145-016-0229	2019-10-06	13-26-084-11W4	\$3,422.04
		Total	\$157,026.33



# Daily Field Ticket

19145-016-0200

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
TOM OSO  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas  
**LOCATION:** 13-26-084-11W4  
**JOB DESCRIPTION:** Greenfire Outage

**DATE:** 2019/9/26  
**PO:** 90048  
**JOB NO:** 19145

**ACTIVITIES:** deliver Office Trailer to site, wait for morning to unload receive material load onto Trailer

## LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Freddy Smith	Truck Driver	<input type="checkbox"/>	9	\$49.50					\$445.50
Scott Patterson	QA/QC Advisor	<input type="checkbox"/>	12	\$67.24					\$806.88

**Subtotal Labour:** **\$1,252.38**

## EQUIPMENT

Equipment	Qty	Rate Type	Rate	Total
Tri-Drive Winch Truck & Trailer	9	Hourly	\$170.00	\$1,530.00

**Subtotal Equipment:** **\$1,530.00**

Total Labour: \$1,252.38  
Total Equipment: \$1,530.00  
Subtotal: \$2,782.38

**Total: \$2,782.38**

**Supervisor Signature:**

**Client Signature:**

  
Jerry H.





# Daily Field Ticket

19145-016-0201

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
TOM 0S0  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas  
**LOCATION:** 13-26-084-11W4  
**JOB DESCRIPTION:** Greenfire Outage

**DATE:** 2019/9/27  
**PO:** 90048  
**JOB NO:** 19145

**ACTIVITIES:** travel to site drop Trailer at location and return to base

## LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Kyle Scott	Foreman - General	<input type="checkbox"/>					7	\$75.05	\$525.35
Scott Patterson	QA/QC Manager	<input type="checkbox"/>					7	\$82.18	\$575.26
Freddy Smith	Truck Driver	<input type="checkbox"/>	7	\$49.50					\$346.50
Zac Dunhame	3rd Year Apprentice	<input type="checkbox"/>					7	\$55.14	\$385.98
Lenny Rostotski	Welder w/Rig CWB or B-Pressure	<input type="checkbox"/>					7	\$124.65	\$872.55
Cole Thompson	Journeyman	<input type="checkbox"/>					4	\$58.71	\$234.84
Gerald Burd	Equipment Operator - Principle	<input type="checkbox"/>					5	\$61.94	\$309.70
Tyler Horner	Journeyman	<input type="checkbox"/>					6	\$58.71	\$352.26
Jeremy Herbin	2nd Year Apprentice	<input type="checkbox"/>					5	\$49.01	\$245.05
Mick Antos	Journeyman	<input type="checkbox"/>					6	\$58.71	\$352.26
Clinton Casey	Journeyman	<input type="checkbox"/>					6	\$58.71	\$352.26
Dylan Brown	1st Year Apprentice	<input type="checkbox"/>					6	\$42.88	\$257.28
Taylor Brown	2nd Year Apprentice	<input type="checkbox"/>					6	\$49.01	\$294.06
Rick Dalglish	Journeyman	<input type="checkbox"/>					7	\$58.71	\$410.97
Will Bacon	Journeyman	<input type="checkbox"/>					7	\$58.71	\$410.97
Jordan Brenin	Journeyman	<input type="checkbox"/>					7	\$58.71	\$410.97

**Subtotal Labour:** **\$6,336.26**

## EQUIPMENT

Equipment	Qty	Rate Type	Rate	Total
Pickup - Crew Cab 4WD 1 Ton	1	Daily	\$270.00	\$270.00
Pickup - Crew Cab 4WD 1 Ton	1	Daily	\$270.00	\$270.00
3 Ton Picker/Tool Truck	7	Hourly	\$46.00	\$322.00
Tri-Drive Winch Truck & Trailer	7	Hourly	\$170.00	\$1,190.00

**Subtotal Equipment:** **\$2,052.00**

Total Labour: \$6,336.26  
Total Equipment: \$2,052.00  
Subtotal: \$8,388.26

**Total:** **\$8,388.26**





## Daily Field Ticket

19145-016-0201

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca

Supervisor Signature:

A handwritten signature in black ink, appearing to be "Khr" followed by a stylized flourish.

Client Signature:

A handwritten signature in black ink, appearing to be "Jerry H." with a stylized flourish above the name.

Jerry H.



# Daily Field Ticket

19145-016-0202

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**LOCATION:** 13-26-084-11W4

**JOB DESCRIPTION:** Greenfire Outage

**DATE:** 2019/9/28

**PO:** 90048

**JOB NO:** 19145

**ACTIVITIES:** 630 on site orientation set up trailers unload materials for mod work start fabrication on MOC scopes walk down the turnaround scope and moc scope

## LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Kyle Scott	Foreman - General	<input type="checkbox"/>	8	\$75.05	4	\$112.58			\$1,050.72
Scott Patterson	QA/QC Manager	<input type="checkbox"/>	8	\$82.18	4	\$123.28			\$1,150.56
Zac Dunhame	3rd Year Apprentice	<input type="checkbox"/>	8	\$55.14	4	\$82.71			\$771.96
Lenny Rostotski	Welder w/Rig CWB or B-Pressure	<input type="checkbox"/>	12	\$124.65					\$1,495.80
Ashton Van	2nd Year Apprentice	<input type="checkbox"/>	8	\$49.01	4	\$73.52			\$686.16
Cole Thompson	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Gerald Burd	Equipment Operator - Principle	<input type="checkbox"/>	8	\$61.94	4	\$92.91			\$867.16
Tyler Horner	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Jeremy Herbin	2nd Year Apprentice	<input type="checkbox"/>	8	\$49.01	4	\$73.52			\$686.16
Mick Antos	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Clinton Casey	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Dylan Brown	1st Year Apprentice	<input type="checkbox"/>	8	\$42.88	4	\$64.32			\$600.32
Rick Dalglish	Journeyman	<input type="checkbox"/>	4	\$58.71		\$88.07			\$234.84
Will Bacon	Journeyman	<input type="checkbox"/>	4	\$58.71		\$88.07			\$234.84
Jordan Brenin	Journeyman	<input type="checkbox"/>	4	\$58.71		\$88.07			\$234.84
Taylor Brown	2nd Year Apprentice	<input type="checkbox"/>	4	\$49.01		\$73.52			\$196.04
Danial Babchuk	Journeyman	<input type="checkbox"/>					7	\$58.71	\$410.97

**Subtotal Labour:** **\$11,908.21**

## EQUIPMENT

Equipment	Qty	Rate Type	Rate	Total
3 Ton Picker/Tool Truck	1	Daily	\$414.00	\$414.00
Pickup - Crew Cab 4WD 1 Ton	1	Daily	\$270.00	\$270.00
Pickup - Crew Cab 4WD 1 Ton	1	Daily	\$270.00	\$270.00
Pickup - Crew Cab 4WD 1 Ton	1	Daily	\$270.00	\$270.00
H2S Monitor	12	Daily	\$25.94	\$311.28
Warehouse Trailer & Tools	1	Daily	\$130.00	\$130.00
Office Trailer	1	Daily	\$105.00	\$105.00

**Subtotal Equipment:** **\$1,770.28**



## Daily Field Ticket

19145-016-0202

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca

Total Labour:	\$11,908.21
Total Equipment:	\$1,770.28
Subtotal:	\$13,678.49

**Total: \$13,678.49**

Supervisor Signature:

A handwritten signature in black ink, appearing to be "V. H. [unclear]".

Client Signature:

A handwritten signature in black ink, appearing to be "Jerry H.". Below the signature, the name "Jerry H." is printed in a simple font.



# Daily Field Ticket

19145-016-0203

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
TOM 0S0  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**LOCATION:** 13-26-084-11W4

**JOB DESCRIPTION:** Greenfire Outage

**DATE:** 2019/9/29

**PO:** 90048

**JOB NO:** 19145

**ACTIVITIES:** FLHA, tool box and inspections (1) continue going over packages and setting out materials (2) place valves at proper pad locations (3) set up containment for coralius meters (4) move heaters around for operations (5) continue fabricating moc 100 (6) prep E-254B and E-256B for dollar plate removal set up the rigging off rigging beam (7) operating zoom boom as required (8) build moc binders for turn over packages (9)

## LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Kyle Scott	Foreman - General	<input type="checkbox"/>	8	\$75.05	6	\$112.58			\$1,275.88
Scott Patterson	QA/QC Manager	<input type="checkbox"/>	8	\$82.18	4	\$123.28			\$1,150.56
Danial Babchuk	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Cole Thompson	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Mick Antos	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Gerald Burd	Equipment Operator - Principle	<input type="checkbox"/>	8	\$61.94	4	\$92.91			\$867.16
Lenny Rostotski	Welder w/Rig CWB or B-Pressure	<input type="checkbox"/>	12	\$124.65					\$1,495.80
Ashton Van	2nd Year Apprentice	<input type="checkbox"/>	8	\$49.01	4	\$73.52			\$686.16
Zac Dunhame	3rd Year Apprentice	<input type="checkbox"/>	8	\$55.14	4	\$82.71			\$771.96
Tyler Horner	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Dylan Brown	1st Year Apprentice	<input type="checkbox"/>	8	\$42.88	4	\$64.32			\$600.32
Jeremy Herbin	2nd Year Apprentice	<input type="checkbox"/>	8	\$49.01	4	\$73.52			\$686.16

**Subtotal Labour:** **\$10,821.84**

## EQUIPMENT

Equipment	Qty	Rate Type	Rate	Total
Pickup - Crew Cab 4WD 1 Ton	1	Daily	\$270.00	\$270.00
3 Ton Picker/Tool Truck	1	Daily	\$414.00	\$414.00
Pickup - Crew Cab 4WD 1 Ton	1	Daily	\$270.00	\$270.00
Pickup - Crew Cab 4WD 1 Ton	1	Daily	\$270.00	\$270.00
Office Trailer	1	Daily	\$105.00	\$105.00
Warehouse Trailer & Tools	1	Daily	\$130.00	\$130.00

**Subtotal Equipment:** **\$1,459.00**

Total Labour: \$10,821.84  
Total Equipment: \$1,459.00  
Subtotal: \$12,280.84

**Total: \$12,280.84**



## Daily Field Ticket

19145-016-0203

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca

Supervisor Signature:

A handwritten signature in black ink, appearing to be "V. [unclear]".

Client Signature:

A handwritten signature in black ink, appearing to be "Jerry H.". Below the signature, the name "Jerry H." is printed in a simple font.





# Daily Field Ticket

19145-016-0207

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**LOCATION:** 13-26-084-11W4

**JOB DESCRIPTION:** Greenfire Outage

**DATE:** 2019/9/29

**PO:** 90048

**JOB NO:** 19145

**ACTIVITIES:** 630 start orientation job walk down with green fire rep FLHA tool box Pad 3 work FE 1511, FE1511, FE1611 all removed and taken to E&I shop Pad 2 FE 1301, FE 1101 removed and sent to E&I shop pad 2 TV1300 replace valve with new valve completed pad 1 FE 303 removed and sent to E&I shop hot bolted dollar plates on E 254 B and E 256 B both ends

## LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Taylor Brown	2nd Year Apprentice	<input type="checkbox"/>	8	\$49.01	4	\$73.52			\$686.16
Rick Dalgleish	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Will Bacon	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Jordan Brenin	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96

**Subtotal Labour:** **\$3,152.04**

## EQUIPMENT

Equipment	Qty	Rate Type	Rate	Total
Pickup - Crew Cab 4WD 1 Ton	1	Daily	\$270.00	\$270.00

**Subtotal Equipment:** **\$270.00**

Total Labour: \$3,152.04  
Total Equipment: \$270.00  
Subtotal: \$3,422.04

**Total:** **\$3,422.04**

**Supervisor Signature:**

**Client Signature:**

  
Jerry.



# Daily Field Ticket

19145-016-0209

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
TOM 0S0  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**LOCATION:** 13-26-084-11W4

**JOB DESCRIPTION:** Greenfire Outage

**DATE:** 2019/9/30

**PO:** 90048

**JOB NO:** 19145

**ACTIVITIES:** 630 tool box FLHA and inspections Dan, Cole, Zac, Ashton -remove dollar plates on E-254B and E-256B both ends - blinded out boiler 520 - ops assist on V-251 and V-252 - start blinding V-257 Mick, Tyler, Dylan, Jeremy blind out V-192, V-195, V-198 FE-1951, FE-1921,FE-1981 removed and taken to E & I shop 1910 & 1940 removed ready for E&I Scott, Lenny working on Moc packages welding moc packages jerry zoom boom and skidsteer as required, ops assist

## LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Kyle Scott	Foreman - General	<input type="checkbox"/>	8	\$75.05	5	\$112.58			\$1,163.30
Scott Patterson	QA/QC Advisor	<input type="checkbox"/>	8	\$67.24	4	\$100.86			\$941.36
Zac Dunhame	3rd Year Apprentice	<input type="checkbox"/>	8	\$55.14	4	\$82.71			\$771.96
Lenny Rostotski	Welder w/Rig CWB or B-Pressure	<input type="checkbox"/>	12	\$124.65					\$1,495.80
Cole Thompson	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Gerald Burd	Equipment Operator - Principle	<input type="checkbox"/>	8	\$61.94	4	\$92.91			\$867.16
Tyler Horner	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Jeremy Herbin	2nd Year Apprentice	<input type="checkbox"/>	8	\$49.01	4	\$73.52			\$686.16
Mick Antos	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Dylan Brown	1st Year Apprentice	<input type="checkbox"/>	8	\$42.88	4	\$64.32			\$600.32
Ashton Van	2nd Year Apprentice	<input type="checkbox"/>	8	\$49.01	4	\$73.52			\$686.16
Danial Babchuk	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96

**Subtotal Labour:** **\$10,500.06**

## EQUIPMENT

Equipment	Qty	Rate Type	Rate	Total
3 Ton Picker/Tool Truck	1	Daily	\$414.00	\$414.00
Pickup - Crew Cab 4WD 1 Ton	1	Daily	\$270.00	\$270.00
Warehouse Trailer & Tools	1	Daily	\$130.00	\$130.00
Office Trailer	1	Daily	\$105.00	\$105.00
Pickup - Crew Cab 4WD 1 Ton	1	Daily	\$270.00	\$270.00
Pickup - Crew Cab 4WD 1 Ton	1	Daily	\$270.00	\$270.00

**Subtotal Equipment:** **\$1,459.00**

Total Labour: \$10,500.06

Total Equipment: \$1,459.00

Subtotal: \$11,959.06

**Total: \$11,959.06**





## Daily Field Ticket

19145-016-0209

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca

Supervisor Signature:

A handwritten signature in black ink, appearing to be "Kyle", followed by a large, stylized flourish.

Client Signature:

A handwritten signature in black ink, appearing to be "Jerry H.", followed by a large, stylized flourish.

Jerry H.



# Daily Field Ticket

19145-016-0211

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
TOM 0S0  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**LOCATION:** 13-26-084-11W4

**JOB DESCRIPTION:** Greenfire Outage

**DATE:** 2019/10/1

**PO:** 90048

**JOB NO:** 19145

**ACTIVITIES:** permit FLHA and tool box Dan, Cole , Zac, Ashton E-257 A & B removed channel heads and piping E-254 A remove dollar plate from both ends E-256 A remove dollar plates from both ends V-251 start to install blinds Mick, Dylan, Tyler Pad 3 valve removal & FE 1530 & 1580 removed and ready for E& I stage new valves for installation operations assist pad 4 install Fv 1910 & 1940 Scott, Lenny continue on moc packages continue welding on moc packages jerry equipment operating and assisting crews

## LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Kyle Scott	Foreman - General	<input type="checkbox"/>	8	\$75.05	5	\$112.58			\$1,163.30
Scott Patterson	QA/QC Advisor	<input type="checkbox"/>	8	\$67.24	4	\$100.86			\$941.36
Zac Dunhame	3rd Year Apprentice	<input type="checkbox"/>	8	\$55.14	4	\$82.71			\$771.96
Lenny Rostotski	Welder w/Rig CWB or B-Pressure	<input type="checkbox"/>	12	\$124.65					\$1,495.80
Cole Thompson	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Gerald Burd	Equipment Operator - Principle	<input type="checkbox"/>	8	\$61.94	4	\$92.91			\$867.16
Tyler Horner	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Jeremy Herbin	2nd Year Apprentice	<input type="checkbox"/>	8	\$49.01	4	\$73.52			\$686.16
Mick Antos	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Clinton Casey	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Dylan Brown	1st Year Apprentice	<input type="checkbox"/>	8	\$42.88	4	\$64.32			\$600.32
Jeremy Herbin	2nd Year Apprentice	<input type="checkbox"/>	8	\$49.01	4	\$73.52			\$686.16

**Subtotal Labour:** **\$10,500.06**

## EQUIPMENT

Equipment	Qty	Rate Type	Rate	Total
3 Ton Picker/Tool Truck	1	Daily	\$414.00	\$414.00
Pickup - Crew Cab 4WD 1 Ton	1	Daily	\$270.00	\$270.00
Pickup - Crew Cab 4WD 1 Ton	1	Daily	\$270.00	\$270.00
Warehouse Trailer & Tools	1	Daily	\$130.00	\$130.00
Office Trailer	1	Daily	\$105.00	\$105.00
Pickup - Crew Cab 4WD 1 Ton	1	Daily	\$270.00	\$270.00

**Subtotal Equipment:** **\$1,459.00**

Total Labour: \$10,500.06  
Total Equipment: \$1,459.00  
Subtotal: \$11,959.06

**Total: \$11,959.06**



## Daily Field Ticket

19145-016-0211

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca

Supervisor Signature:

A handwritten signature in black ink, appearing to be "Kph" followed by a stylized flourish.

Client Signature:

A handwritten signature in black ink, appearing to be "Jerry H." with a stylized flourish.

Jerry H.



## Daily Field Ticket

19145-016-0212

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
TOM OSO  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**LOCATION:** 13-26-084-11W4

**JOB DESCRIPTION:** Greenfire Outage

**DATE:** 2019/9/30

**PO:** 90048

**JOB NO:** 19145

**ACTIVITIES:** 630 pm start FLHA and tool box finished blinding E 257 A&B soaked v192, v195, v198 for cleaning remove and install 4" gate valve at pad 4 B520 install blinds and remove pigging spools changed out a globe valve on pad 3 hot bolt dollar plates on E254&256

### LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Taylor Brown	2nd Year Apprentice	<input type="checkbox"/>	8	\$49.01	4	\$73.52			\$686.16
Rick Dalgleish	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Will Bacon	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Jordan Brenin	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96

**Subtotal Labour:** **\$3,152.04**

### EQUIPMENT

Equipment	Qty	Rate Type	Rate	Total
Pickup - Crew Cab 4WD 1 Ton	1	Daily	\$270.00	\$270.00

**Subtotal Equipment:** **\$270.00**

Total Labour: \$3,152.04  
Total Equipment: \$270.00  
Subtotal: \$3,422.04

**Total: \$3,422.04**

**Supervisor Signature:**

**Client Signature:**

  
Jerry H.



## Daily Field Ticket

19145-016-0213

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
TOM 0S0  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**LOCATION:** 13-26-084-11W4

**JOB DESCRIPTION:** Greenfire Outage

**DATE:** 2019/10/1

**PO:** 90048

**JOB NO:** 19145

**ACTIVITIES:** 630 pm start permit, FLHA and toolbox F-360 installed blinds, opened manway, Se-345 install spec blind B-520 opened manway, Install pigging spool well H&I Installed globe valves install FV-1531 & FV-1581 & FV-1530 V-252 install blinds

### LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Taylor Brown	2nd Year Apprentice	<input type="checkbox"/>	8	\$49.01	4	\$73.52			\$686.16
Rick Dalgleish	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Will Bacon	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Jordan Brenin	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96

**Subtotal Labour:** **\$3,152.04**

### EQUIPMENT

Equipment	Qty	Rate Type	Rate	Total
Pickup - Crew Cab 4WD 1 Ton	1	Daily	\$270.00	\$270.00

**Subtotal Equipment:** **\$270.00**

Total Labour: \$3,152.04  
Total Equipment: \$270.00  
Subtotal: \$3,422.04

**Total: \$3,422.04**

**Supervisor Signature:**

**Client Signature:**

  
Chad R



# Daily Field Ticket

19145-016-0214

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**LOCATION:** 13-26-084-11W4

**JOB DESCRIPTION:** Greenfire Outage

**DATE:** 2019/10/2

**PO:** 90048

**JOB NO:** 19145

**ACTIVITIES:** 630 am start permit, FLHA and tool box Dan, Cole, Zac FV-5152 remove for E&I inspections, installed and torque FV-5252 remove for E&I inspections installed and torque B-510 install blinds remove pigging spools and modify, re-Install for pigging operations operations support Mick, Tyler, Jeremy, Dylan, Ashton Remove Psv -1546 install globe valve at well pad L FV-1531 and Fv-1581 finish bolt up and torque V192, V198, V194 closed manways and deblinded torque everything Lenny, Scott complete moc packages continue fabricating moc spools jerry equipment operator, assist crew where needed

## LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Kyle Scott	Foreman - General	<input type="checkbox"/>	8	\$75.05	5	\$112.58			\$1,163.30
Scott Patterson	QA/QC Manager	<input type="checkbox"/>	8	\$82.18	4	\$123.28			\$1,150.56
Zac Dunhame	3rd Year Apprentice	<input type="checkbox"/>	8	\$55.14	4	\$82.71			\$771.96
Lenny Rostotski	Welder w/Rig CWB or B-Pressure	<input type="checkbox"/>	12	\$124.65					\$1,495.80
Cole Thompson	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Gerald Burd	Equipment Operator - Principle	<input type="checkbox"/>	8	\$61.94	4	\$92.91			\$867.16
Tyler Horner	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Jeremy Herbin	2nd Year Apprentice	<input type="checkbox"/>	8	\$49.01	4	\$73.52			\$686.16
Mick Antos	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Ashton Van	2nd Year Apprentice	<input type="checkbox"/>	8	\$49.01	4	\$73.52			\$686.16
Dylan Brown	1st Year Apprentice	<input type="checkbox"/>	8	\$42.88	4	\$64.32			\$600.32
Danial Babchuk	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96

**Subtotal Labour:** **\$10,709.26**

## EQUIPMENT

Equipment	Qty	Rate Type	Rate	Total
3 Ton Picker/Tool Truck	1	Daily	\$414.00	\$414.00
Pickup - Crew Cab 4WD 1 Ton	1	Daily	\$270.00	\$270.00
H2S Monitor	3	Daily	\$25.94	\$77.82
Warehouse Trailer & Tools	1	Daily	\$130.00	\$130.00
Office Trailer	1	Daily	\$105.00	\$105.00
Pickup - Crew Cab 4WD 1 Ton	1	Daily	\$270.00	\$270.00
Pickup - Crew Cab 4WD 1 Ton	1	Daily	\$270.00	\$270.00

**Subtotal Equipment:** **\$1,536.82**

Total Labour: \$10,709.26  
Total Equipment: \$1,536.82  
Subtotal: \$12,246.08

**Total: \$12,246.08**

**Daily Field Ticket**  
19145-016-0214

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
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**Supervisor Signature:**



**Client Signature:**



Chad R.





# Daily Field Ticket

19145-016-0217

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
TOM OSO  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**LOCATION:** 13-26-084-11W4

**JOB DESCRIPTION:** Greenfire Outage

**DATE:** 2019/10/2

**PO:** 90048

**JOB NO:** 19145

**ACTIVITIES:** 630 pm permit, FLHA, tool box P-220 A disconnect piping from pump V-180 blind and open man way V-185 blind and open man way N well globe valve installed FE-1801 removed for inspections operations assist clean up area

## LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Taylor Brown	2nd Year Apprentice	<input type="checkbox"/>	8	\$49.01	4	\$73.52			\$686.16
Rick Dalgleish	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Will Bacon	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Jordan Brenin	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96

**Subtotal Labour:** **\$3,152.04**

## EQUIPMENT

Equipment	Qty	Rate Type	Rate	Total
Pickup - Crew Cab 4WD 1 Ton	1	Daily	\$270.00	\$270.00

**Subtotal Equipment:** **\$270.00**

Total Labour: \$3,152.04  
Total Equipment: \$270.00  
Subtotal: \$3,422.04

**Total: \$3,422.04**

**Supervisor Signature:**

**Client Signature:**



# Daily Field Ticket

19145-016-0218

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**DATE:** 2019/10/3

**LOCATION:** 13-26-084-11W4

**PO:** 90048

**JOB DESCRIPTION:** Greenfire Outage

**JOB NO:** 19145

**ACTIVITIES:** 630 am start permit FLHA and tool box Danial, Zac, Jeremy, Dylan, Cole F360 remove 6" blind for cleaning 8- Tank farm valves removed studs and replaced B- 520 pigging spool removal and installation staged valves at tank farm remove P-220 from building and haul to shop H-755 remove manway and inspect, repair fire wall Mick, Tyler, Ashton P181 remove pump with millwrights and haul to shop FE-1830 remove for inspections FE-1831 remove for inspections assist greenfire with picker truck jerry equipment operations Scott, Lenny line up X-ray crew build NDE request finish fabrication on moc spools start tie ins on MOC 100

## LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Kyle Scott	Foreman - General	<input type="checkbox"/>	8	\$75.05	5	\$112.58			\$1,163.30
Scott Patterson	QA/QC Manager	<input type="checkbox"/>	8	\$82.18	4	\$123.28			\$1,150.56
Ashton Van	2nd Year Apprentice	<input type="checkbox"/>	8	\$49.01	4	\$73.52			\$686.16
Zac Dunhame	3rd Year Apprentice	<input type="checkbox"/>	8	\$55.14	4	\$82.71			\$771.96
Lenny Rostotski	Welder w/Rig CWB or B-Pressure	<input type="checkbox"/>	12	\$124.65					\$1,495.80
Cole Thompson	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Gerald Burd	Equipment Operator - Principle	<input type="checkbox"/>	8	\$61.94	4	\$92.91			\$867.16
Tyler Horner	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Jeremy Herbin	2nd Year Apprentice	<input type="checkbox"/>	8	\$49.01	4	\$73.52			\$686.16
Mick Antos	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Danial Babchuk	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Dylan Brown	1st Year Apprentice	<input type="checkbox"/>	8	\$42.88	4	\$64.32			\$600.32

**Subtotal Labour:** **\$10,709.26**

## EQUIPMENT

Equipment	Qty	Rate Type	Rate	Total
3 Ton Picker/Tool Truck	1	Daily	\$414.00	\$414.00
Pickup - Crew Cab 4WD 1 Ton	1	Daily	\$270.00	\$270.00
H2S Monitor	3	Daily	\$25.94	\$77.82
Warehouse Trailer & Tools	1	Daily	\$130.00	\$130.00
Office Trailer	1	Daily	\$105.00	\$105.00
Pickup - Crew Cab 4WD 1 Ton	1	Daily	\$270.00	\$270.00
Pickup - Crew Cab 4WD 1 Ton	1	Daily	\$270.00	\$270.00

**Subtotal Equipment:** **\$1,536.82**

Total Labour: \$10,709.26  
Total Equipment: \$1,536.82  
Subtotal: \$12,246.08

**Total: \$12,246.08**



## Daily Field Ticket

19145-016-0218

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca

Supervisor Signature:

*Kyle [Signature]*

Client Signature:

*[Signature]*  
G. J. R.

# Daily Field Ticket

19145-016-0221

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**LOCATION:** 13-26-084-11W4

**JOB DESCRIPTION:** Greenfire Outage

**DATE:** 2019/10/3

**PO:** 90048

**JOB NO:** 19145

**ACTIVITIES:** 630 pm start permit FLHA and tool box E-207 blind and remove channel head F-360 remove sight glass, remove PSV-3600 B-520 Assist cedar with pig spools F440 vessel entry blinds installed v251 install transmitter on top of vessel

## LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Taylor Brown	2nd Year Apprentice	<input type="checkbox"/>	8	\$49.01	4	\$73.52			\$686.16
Rick Dalglish	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Will Bacon	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Jordan Brenin	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96

**Subtotal Labour:** **\$3,152.04**

## EQUIPMENT

Equipment	Qty	Rate Type	Rate	Total
Pickup - Crew Cab 4WD 1 Ton	1	Daily	\$270.00	\$270.00

**Subtotal Equipment:** **\$270.00**

Total Labour: \$3,152.04  
Total Equipment: \$270.00  
Subtotal: \$3,422.04

**Total:** **\$3,422.04**

**Supervisor Signature:**

**Client Signature:**

  
Chad R.





# Daily Field Ticket

19145-016-0222

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**DATE:** 2019/10/4

**LOCATION:** 13-26-084-11W4

**PO:** 90048

**JOB DESCRIPTION:** Greenfire Outage

**JOB NO:** 19145

**ACTIVITIES:** 630 permit and FLHA and tool box Danial, Cole, Zac, Dylan B-520 install 12 spools after pigging was complete B-510 move ceda pigging spools over E-205 drop spools and prep for removal E-207 hang rigging and prep for removal mick, Tyler, Jeremy, Ashton move all media to location V-180 deblind and close man way torque everything V-185 deblind and close man way torque everything assist at wash pad lenny, Scott continue on moc packages jerry equipment operator assist crane with E205

## LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Kyle Scott	Foreman - General	<input type="checkbox"/>			13	\$112.58			\$1,463.54
Scott Patterson	QA/QC Manager	<input type="checkbox"/>			12	\$123.28			\$1,479.36
Danial Babchuk	Journeyman	<input type="checkbox"/>			12	\$88.07			\$1,056.84
Zac Dunhame	3rd Year Apprentice	<input type="checkbox"/>			12	\$82.71			\$992.52
Lenny Rostotski	Welder w/Rig CWB or B-Pressure	<input type="checkbox"/>	12	\$124.65					\$1,495.80
Cole Thompson	Journeyman	<input type="checkbox"/>			12	\$88.07			\$1,056.84
Gerald Burd	Equipment Operator - Principle	<input type="checkbox"/>			12	\$92.91			\$1,114.92
Tyler Horner	Journeyman	<input type="checkbox"/>			12	\$88.07			\$1,056.84
Jeremy Herbin	2nd Year Apprentice	<input type="checkbox"/>			12	\$73.52			\$882.24
Mick Antos	Journeyman	<input type="checkbox"/>			12	\$88.07			\$1,056.84
Ashton Van	2nd Year Apprentice	<input type="checkbox"/>			12	\$73.52			\$882.24
Dylan Brown	1st Year Apprentice	<input type="checkbox"/>			12	\$64.32			\$771.84

**Subtotal Labour:** **\$13,309.82**

## EQUIPMENT

Equipment	Qty	Rate Type	Rate	Total
3 Ton Picker/Tool Truck	1	Daily	\$414.00	\$414.00
Pickup - Crew Cab 4WD 1 Ton	3	Daily	\$270.00	\$810.00
H2S Monitor	3	Daily	\$25.94	\$77.82
Warehouse Trailer & Tools	1	Daily	\$130.00	\$130.00
Office Trailer	1	Daily	\$105.00	\$105.00

**Subtotal Equipment:** **\$1,536.82**

Total Labour: \$13,309.82

Total Equipment: \$1,536.82

Subtotal: \$14,846.64

**Total: \$14,846.64**



## Daily Field Ticket

19145-016-0222

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca

Supervisor Signature:

A handwritten signature in black ink, appearing to read "Kyle", followed by a large, stylized flourish.

Client Signature:

A handwritten signature in black ink, appearing to read "Chad R.", with a stylized flourish above the name.



# Daily Field Ticket

19145-016-0224

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**LOCATION:** 13-26-084-11W4

**JOB DESCRIPTION:** Greenfire Outage

**DATE:** 2019/10/4

**PO:** 90048

**JOB NO:** 19145

**ACTIVITIES:** 630 pm start FLHA tool box and permit support ceda with pigging spools de-oiled water heater valves F320 loto blind and open F320 install all butterfly valves V802 run studs for blinding

## LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Taylor Brown	2nd Year Apprentice	<input type="checkbox"/>			12	\$73.52			\$882.24
Rick Dalgleish	Journeyman	<input type="checkbox"/>			12	\$88.07			\$1,056.84
Will Bacon	Journeyman	<input type="checkbox"/>			12	\$88.07			\$1,056.84
Jordan Brenin	Journeyman	<input type="checkbox"/>			12	\$88.07			\$1,056.84

**Subtotal Labour:** **\$4,052.76**

## EQUIPMENT

Equipment	Qty	Rate Type	Rate	Total
Pickup - Crew Cab 4WD 1 Ton	1	Daily	\$270.00	\$270.00

**Subtotal Equipment:** **\$270.00**

## THIRD PARTY

Description	Qty	Rate Type	Rate	Upcharge (%)	Rate (marked-up)	Total
McCordick INV#2391160-00	1	Each	\$335.42	10%	\$368.96	\$368.96

**Subtotal Third Party:** **\$368.96**

Total Labour: \$4,052.76  
Total Equipment: \$270.00  
Total Third Party: \$368.96  
Subtotal: \$4,691.72

**Total: \$4,691.72**

**Supervisor Signature:**

**Client Signature:**





# Daily Field Ticket

19145-016-0224

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
TOM OSO  
403.946.0066  
www.boomltd.ca

## INVOICE

Page #: 1

Cust #: 200000002163

**Ship To:**

BOOM CONSTRUCTION  
BOX 1379

CROSSFIELD, AB T0M 0S0

**Bill To:**

BOOM CONSTRUCTION  
BOX 1379

CROSSFIELD, AB  
TOM OSO

**Instructions:**



# McCORDICK

A Bunzl Company

**Correspondence To:**

McCordick, A Bunzl Company  
400 Jamieson Parkway

Cambridge, ON N3C 4N3

TEL: (519) 651-2233

FAX: (519) 651-0508

**Ship Point:**

(AB) McCordick, A Bunzl Company

Invoice #: 2391160-00

Invoice Date: 09/25/19

Via: CENTRAL PPD

Shipped 09/25/19

Terms: R N30

PST Lic#:

GST Reg# 882073166RT0008

PO Date: 09/24/19

PO # 19145

Taken By aow

Placed By BRENDA

Ln #	Product And Description	Quantity Ordered	Quantity B.O.	Quantity Shipped	Qty UM	Unit Price	Disc %	Amount (Net)
1	SCT3RE9 WORKHORSE DANGER TAPE RED 3X1000	14	0	14	ROLL	8.84	0.00	123.76
					Vend Prod: B3102R21-128			
2	SCT3YE1 WORKHORSE CAUTION TAPE YELLOW 3"X 1000'	14	0	14	ROLL	6.47	0.00	90.58
					Vend Prod: B3102Y16-128			
3	HRL11 HOWARD LEIGHT - LASER LITE UNCORDED EAR PLUGS	6	0	6	BOX	20.18	0.00	121.08
					Vend Prod: LL-1			
3	Lines Total			34				
		Qty Shipped Total						
					Total			335.42
					G.S.T./H.S.T.			16.77
					Invoice Total			352.19

Last Page

Cash amount If Paid /19

**Message:**

Ask us how to pay your bill electronically at [ar@mccordick.com](mailto:ar@mccordick.com)  
Thank you for your valued business.

Date/Time Printed  
09/25/19 22:23

NO RETURNS ACCEPTED WITHOUT AN RMA NUMBER

130 CHANDS CREEK BLVD #3  
WINNIPEG, MB R2R 1V7  
TEL: (204) 772-2495  
FAX: (204) 775-2650

#12020 - 184 STREET NW  
EDMONTON, AB T5V 1T4  
TEL: (780) 466-9660  
FAX: (780) 468-5886

400 JAMIESON PKWY  
CAMBRIDGE ON N3C 4N3  
TEL: (519) 651-2233  
FAX: (519) 651-0508

10 KING EDWARD ST. #101  
COQUITLAM, BC V3K 6E7  
TEL: (604) 543-0307  
FAX: (604) 543-0377

1380 JOLIOT CURIE, CONDO R04  
BOUCHERVILLE, QC J4B 7L9  
TEL: (450) 449-5835  
FAX: (450) 449-5839 Vmc.35



# Daily Field Ticket

19145-016-0225

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**LOCATION:** 13-26-084-11W4

**JOB DESCRIPTION:** Greenfire Outage

**DATE:** 2019/10/5

**PO:** 90048

**JOB NO:** 19145

**ACTIVITIES:** 630 pm FLHA, toolbox and permit F440 A,C add media to vessels B-540 stage compressor for ceda pad 2 cooler piping mods FE-3210 inspected and reinstated FE-3200 inspected and reinstated

## LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Taylor Brown	2nd Year Apprentice	<input type="checkbox"/>			12	\$73.52			\$882.24
Rick Dalgleish	Journeyman	<input type="checkbox"/>			12	\$88.07			\$1,056.84
Will Bacon	Journeyman	<input type="checkbox"/>			12	\$88.07			\$1,056.84
Jordan Brenin	Journeyman	<input type="checkbox"/>			12	\$88.07			\$1,056.84

**Subtotal Labour:** **\$4,052.76**

## EQUIPMENT

Equipment	Qty	Rate Type	Rate	Total
Pickup - Crew Cab 4WD 1 Ton	1	Daily	\$270.00	\$270.00

**Subtotal Equipment:** **\$270.00**

Total Labour: \$4,052.76  
Total Equipment: \$270.00  
Subtotal: \$4,322.76

**Total:** **\$4,322.76**

**Supervisor Signature:**

**Client Signature:**



# Daily Field Ticket

19145-016-0226

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
TOM 0S0  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**LOCATION:** 13-26-084-11W4

**JOB DESCRIPTION:** Greenfire Outage

**DATE:** 2019/10/5

**PO:** 90048

**JOB NO:** 19145

**ACTIVITIES:** 630 am start FLHA tool box and permit Dan, Cole, Zac, Jeremy, Ashton, Dylan v202 blinded and open man way B-520 remove pigging spools and reinstate all piping from pigging E205 assist with removal E208 assist with removal and loading onto Trailer Remove FE-3210 and FE-3200 for inspections F-320 remove man way for cleaning crew mick, Tyler remove spools on V180 and V185 for cleaning clean building pad 5 remove plywood from 250 ton crane location and assist with demob

## LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Kyle Scott	Foreman - General	<input type="checkbox"/>			13	\$112.58			\$1,463.54
Scott Patterson	QA/QC Manager	<input type="checkbox"/>			12	\$123.28			\$1,479.36
Ashton Van	2nd Year Apprentice	<input type="checkbox"/>			12	\$73.52			\$882.24
Zac Dunhame	3rd Year Apprentice	<input type="checkbox"/>			12	\$82.71			\$992.52
Lenny Rostotski	Welder w/Rig CWB or B-Pressure	<input type="checkbox"/>	12	\$124.65					\$1,495.80
Cole Thompson	Journeyman	<input type="checkbox"/>			12	\$88.07			\$1,056.84
Gerald Burd	Equipment Operator - Principle	<input type="checkbox"/>			12	\$92.91			\$1,114.92
Tyler Horner	Journeyman	<input type="checkbox"/>			12	\$88.07			\$1,056.84
Jeremy Herbin	2nd Year Apprentice	<input type="checkbox"/>			12	\$73.52			\$882.24
Mick Antos	Journeyman	<input type="checkbox"/>			12	\$88.07			\$1,056.84
Danial Babchuk	Journeyman	<input type="checkbox"/>			12	\$88.07			\$1,056.84
Dylan Brown	1st Year Apprentice	<input type="checkbox"/>			12	\$64.32			\$771.84

**Subtotal Labour:** **\$13,309.82**

## EQUIPMENT

Equipment	Qty	Rate Type	Rate	Total
3 Ton Picker/Tool Truck	1	Daily	\$414.00	\$414.00
Pickup - Crew Cab 4WD 1 Ton	3	Daily	\$270.00	\$810.00
H2S Monitor	3	Daily	\$25.94	\$77.82
Warehouse Trailer & Tools	1	Daily	\$130.00	\$130.00
Office Trailer	1	Daily	\$105.00	\$105.00

**Subtotal Equipment:** **\$1,536.82**

Total Labour: \$13,309.82

Total Equipment: \$1,536.82

Subtotal: \$14,846.64

**Total: \$14,846.64**



## Daily Field Ticket

19145-016-0226

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca

Supervisor Signature:

A handwritten signature in black ink, appearing to be "K. L. 197", written over a large, faint, light blue watermark that reads "BOOM CONSTRUCTION".

Client Signature:

A handwritten signature in black ink, appearing to be "James H.", written over a large, faint, light blue watermark that reads "BOOM CONSTRUCTION".





# Daily Field Ticket

19145-016-0228

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas  
**LOCATION:** 13-26-084-11W4  
**JOB DESCRIPTION:** Greenfire Outage

**DATE:** 2019/10/6  
**PO:** 90048  
**JOB NO:** 19145

**ACTIVITIES:** 630am start permit FLHA and toolbox Danial, Cole, Zac, Jeremy, Dylan B510 shoe repair investigation fabricate new stack for v562 F440 A & C closed and deblinded B540 pigging spools Installed butterfly valves in water building Tyler, Mick, Ashton, assist with moc 67 added bolt up scope clean up studs nuts gaskets and spools that are no longer being used clean dollar plates and channel heads with hotzy pressure washer Scott, Lenny work on tie ins on moc 67 pwht requests and hydros jerry equipment operator

## LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Kyle Scott	Foreman - General	<input type="checkbox"/>	8	\$75.05	5	\$112.58			\$1,163.30
Scott Patterson	QA/QC Manager	<input type="checkbox"/>	8	\$82.18	4	\$123.28			\$1,150.56
Danial Babchuk	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Zac Dunhame	3rd Year Apprentice	<input type="checkbox"/>	8	\$55.14	4	\$82.71			\$771.96
Lenny Rostotski	Welder w/Rig CWB or B-Pressure	<input type="checkbox"/>	8	\$124.65	4	\$124.65			\$1,495.80
Cole Thompson	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Gerald Burd	Equipment Operator - Principle	<input type="checkbox"/>	8	\$61.94	4	\$92.91			\$867.16
Tyler Horner	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Jeremy Herbin	2nd Year Apprentice	<input type="checkbox"/>	8	\$49.01	4	\$73.52			\$686.16
Mick Antos	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Ashton Van	2nd Year Apprentice	<input type="checkbox"/>	8	\$49.01	4	\$73.52			\$686.16
Dylan Brown	1st Year Apprentice	<input type="checkbox"/>	8	\$42.88	4	\$64.32			\$600.32

**Subtotal Labour:** **\$10,709.26**

## EQUIPMENT

Equipment	Qty	Rate Type	Rate	Total
3 Ton Picker/Tool Truck	1	Daily	\$414.00	\$414.00
Pickup - Crew Cab 4WD 1 Ton	3	Daily	\$270.00	\$810.00
H2S Monitor	3	Daily	\$25.94	\$77.82
Warehouse Trailer & Tools	1	Daily	\$130.00	\$130.00
Office Trailer	1	Daily	\$105.00	\$105.00

**Subtotal Equipment:** **\$1,536.82**

Total Labour: \$10,709.26  
Total Equipment: \$1,536.82  
Subtotal: \$12,246.08

**Total: \$12,246.08**





## Daily Field Ticket

19145-016-0228

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca

Supervisor Signature:

A handwritten signature in black ink, appearing to read "Kyle", followed by a stylized flourish.

Client Signature:

A handwritten signature in black ink, consisting of a stylized, cursive script.



# Daily Field Ticket

19145-016-0229

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
TOM OSO  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**LOCATION:** 13-26-084-11W4

**JOB DESCRIPTION:** Greenfire Outage

**DATE:** 2019/10/6

**PO:** 90048

**JOB NO:** 19145

**ACTIVITIES:** 630 pm start tool box, FLHA and permits install steam traps in process building coriolus meters steam clean with hotzy B540 finish pigging spools for ceda assist ceda for demob v201 blind and open man way pad 3 remove non nace valves blind well J & H

## LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Taylor Brown	2nd Year Apprentice	<input type="checkbox"/>	8	\$49.01	4	\$73.52			\$686.16
Rick Dalglish	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Will Bacon	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Jordan Brenin	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96

**Subtotal Labour:** **\$3,152.04**

## EQUIPMENT

Equipment	Qty	Rate Type	Rate	Total
Pickup - Crew Cab 4WD 1 Ton	1	Daily	\$270.00	\$270.00

**Subtotal Equipment:** **\$270.00**

Total Labour: \$3,152.04  
Total Equipment: \$270.00  
Subtotal: \$3,422.04

**Total:** **\$3,422.04**

**Supervisor Signature:**

**Client Signature:**



## Invoice

Invoice#: 20180591

Date: 10/17/2019

Box 1379  
42A McCool Cres  
Crossfield, AB T0M 0S0

**Billed To:** Greenfire Hangingstone Operating Corporation  
1650, 444 - 5 Avenue SW  
Calgary AB T2P 2T8

**Project:** Greenfire Outage  
1650, 444 - 5 Avenue SW  
Calgary AB T2P 2T8

**Due Date:** 10/17/2019

**Terms:**

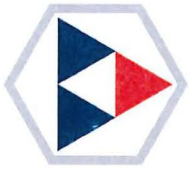
**Order#** 90048

Description	Unit	Quantity	Price	Amount
As per attached spreadsheet		1.0000	128,972.290000	128,972.29

Total:	128,972.29	Holdback:	0.00	Invoice Amount:	128,972.29
		GST Taxable:	128,972.29	GST:	6,448.61
		PST Taxable:	0.00	PST:	0.00
				Invoice Total:	135,420.90
				<b>Amount Due</b>	<b>135,420.90</b>
GST/HST Id#: 139628697RT0001					

A service charge of 10 %  
per month will be charged on all amounts  
overdue on regular statement dates.

Thank you for your prompt payment!



**BOOM**  
CONSTRUCTION

Field Ticket No.	Field Ticket Date	Location	Total Billable (\$)
19145-016-0233	2019-10-07	13-26-084-11W4	\$8,696.93
19145-016-0231	2019-10-07	13-26-084-11W4	\$12,414.82
19145-016-0235	2019-10-08	13-26-084-11W4	\$3,422.04
19145-016-0234	2019-10-08	13-26-084-11W4	\$12,492.64
19145-016-0238	2019-10-09	13-26-084-11W4	\$3,422.04
19145-016-0237	2019-10-09	13-26-084-11W4	\$11,559.92
19145-016-0242	2019-10-10	13-26-084-11W4	\$3,422.04
19145-016-0240	2019-10-10	13-26-084-11W4	\$11,559.92
19145-016-0246	2019-10-11	13-26-084-11W4	\$4,322.76
19145-016-0243	2019-10-11	13-26-084-11W4	\$13,350.84
19145-016-0250	2019-10-12	13-26-084-11W4	\$3,265.92
19145-016-0245	2019-10-12	13-26-084-11W4	\$15,623.63
19145-016-0252	2019-10-13	13-26-084-11W4	\$2,600.08
19145-016-0251	2019-10-13	13-26-084-11W4	\$8,704.12
19145-016-0253	2019-10-14	13-26-084-11W4	\$6,439.98
19145-016-0256	2019-10-15	13-26-084-11W4	\$7,674.61
Total			\$128,972.29





# Daily Field Ticket

19145-016-0231

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**LOCATION:** 13-26-084-11W4

**JOB DESCRIPTION:** Greenfire Outage

**DATE:** 2019/10/7

**PO:** 90048

**JOB NO:** 19145

**ACTIVITIES:** 630 am start permit FLHA and tool box Dan, Cole, Zac, Jeremy, Ashton, Dylan Tyler mick B540 reinstated pigging spools, open man way Fv4425 replaced valve FV4425 replaced butterfly valve 3" 150 gate valve r placed with new valve FV4301 replaced valve remove spools for lancing finish cleaning corrialis meters jerry equipment operator as required Lenny, Scott receive extra material required for moc scopes start fabrication on p220 a spool moc 09 tie in complete

## LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Kyle Scott	Foreman - General	<input type="checkbox"/>	8	\$75.05	5	\$112.58			\$1,163.30
Scott Patterson	QA/QC Manager	<input type="checkbox"/>	8	\$82.18	6	\$123.28			\$1,397.12
Danial Babchuk	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Zac Dunhame	3rd Year Apprentice	<input type="checkbox"/>	8	\$55.14	4	\$82.71			\$771.96
Lenny Rostotski	Welder w/Rig CWB or B-Pressure	<input type="checkbox"/>	12	\$124.65					\$1,495.80
Cole Thompson	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Gerald Burd	Equipment Operator - Principle	<input type="checkbox"/>	8	\$61.94	4	\$92.91			\$867.16
Tyler Horner	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Jeremy Herbin	2nd Year Apprentice	<input type="checkbox"/>	8	\$49.01	4	\$73.52			\$686.16
Mick Antos	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Ashton Van	2nd Year Apprentice	<input type="checkbox"/>	8	\$49.01	4	\$73.52			\$686.16
Dylan Brown	1st Year Apprentice	<input type="checkbox"/>	8	\$42.88	4	\$64.32			\$600.32

**Subtotal Labour:** **\$10,955.82**

## EQUIPMENT

Equipment	Qty	Rate Type	Rate	Total
3 Ton Picker/Tool Truck	1	Daily	\$414.00	\$414.00
Pickup - Crew Cab 4WD 1 Ton	3	Daily	\$270.00	\$810.00
H2S Monitor	3	Hourly	\$0.00	\$0.00
Warehouse Trailer & Tools	1	Daily	\$130.00	\$130.00
Office Trailer	1	Daily	\$105.00	\$105.00

**Subtotal Equipment:** **\$1,459.00**

Total Labour: \$10,955.82

Total Equipment: \$1,459.00

Subtotal: \$12,414.82

**Total: \$12,414.82**





## Daily Field Ticket

19145-016-0231

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca

Supervisor Signature:

A handwritten signature in black ink, appearing to be "Kyle", written over a horizontal line.

Client Signature:

A handwritten signature in black ink, appearing to be "James", written over a horizontal line.



# Daily Field Ticket

19145-016-0233

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**LOCATION:** 13-26-084-11W4

**JOB DESCRIPTION:** Greenfire Outage

**DATE:** 2019/10/7

**PO:** 90048

**JOB NO:** 19145

**ACTIVITIES:** 630 pm permit FLHA toolbox FE 1130 remove for hydro install blind for hydro 2021 valve installed FE4303 roll out for inspections and then reinstated fe4302 roll out for inspections f360 media filled FE 1330 rolled out for inspections and replace with new

## LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Taylor Brown	2nd Year Apprentice	<input type="checkbox"/>	8	\$49.01	4	\$73.52			\$686.16
Rick Dalgleish	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Will Bacon	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Jordan Brenin	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96

**Subtotal Labour:** **\$3,152.04**

## EQUIPMENT

Equipment	Qty	Rate Type	Rate	Total
Pickup - Crew Cab 4WD 1 Ton	1	Daily	\$270.00	\$270.00

**Subtotal Equipment:** **\$270.00**

## THIRD PARTY

Description	Qty	Rate Type	Rate	Upcharge (%)	Rate (marked-up)	Total
Outkast Oilfield Supplies INV#102327	1	Each	\$4,795.35	10%	\$5,274.89	\$5,274.89

**Subtotal Third Party:** **\$5,274.89**

Total Labour: \$3,152.04  
Total Equipment: \$270.00  
Total Third Party: \$5,274.89  
Subtotal: \$8,696.93

**Total:** **\$8,696.93**

**Supervisor Signature:**

**Client Signature:**



# Daily Field Ticket

19145-016-0233

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
TOM 0S0  
403.946.0066  
www.boomltd.ca



Box 636 Ph: 403-638-3941  
Sundre, Alberta T0M 1X0 Fax: 403-638-3944  
e-mail: outkast@telus.net

## INVOICE

Invoice No.: 102327  
Date: 09/24/2019  
Ship Date:  
Page: 1  
Re: Order No. 1861

### Sold to:

Boom Construction  
PO Box 1379  
Crossfield, Alberta T0M 0S0

### Ship to:

Boom Construction  
PO Box 1379  
Crossfield, Alberta T0M 0S0  
KYLE SCOTT  
GREENFIRE OUTAGE  
CONSUMABLES MRR#1 PO RFQ

Quantity	Unit	Description	Tax	Base Price	Disc %	Unit Price	Amount
		SO# 102327					
8	Box	Fleece Rags 20# Box	G	23.46	15.00	19.94	159.52
2	Bx	Garbage Bags XHD	G	46.32	15.00	39.37	78.74
1	50lb	Lincoln 6010 5P+ Welding Rod 1/8	G	347.88	15.00	295.70	295.70
1	50lb	Lincoln 6010 5P+ Welding Rod 3/32	G	358.54	15.00	304.76	304.76
4	2.5 Kg.	LA 7018 Welding Rod 3/32	G	38.47	15.00	32.70	130.80
8	5 Kg.	LA 7018 Welding Rod 1/8	G	49.60	15.00	42.16	337.28
8	5 Kg.	LA 7018 Welding Rod 5/32 14"	G	50.62	15.00	43.03	344.24
4	5 Kg.	LA 7018 Welding Rod 3/16	G	50.62	15.00	43.03	172.12
20	Each	1/2x540 Teflon Tape	G	4.58	15.00	3.89	77.80
20	Each	3/4x540 Teflon Tape	G	6.36	15.00	5.41	108.20
12	Each	TF-15 Thread Sealant	G	23.83	15.00	20.26	243.12
12	Each	Nikal Thread Sealant	G	27.19	15.00	23.11	277.32
4	Roll	Mechanics Wire	G	10.96	15.00	9.32	37.28
25	Each	Walter Zip Cut 6"	G	9.10	15.00	7.74	193.50
36	Each	Brakleen	G	6.87	15.00	5.84	210.24
24	Each	Aerokroil	G	36.57	15.00	31.08	745.92
25	Each	6x1/8 Walter Grinding Disc	G	8.76	15.00	7.45	186.25
4	Each	6" Talpan Narrow Buffing Wheel	G	24.87	15.00	21.14	84.56
10	Each	Lockout Locks Red	G	14.28		14.28	142.80
		SO# 102328					
20	Each	TYVEK COVERALL - WHITE XL	G	9.96		9.96	199.20
20	Each	TYVEK COVERALL - WHITE 2XL	G	11.31		11.31	226.20
20	Each	TYVEK COVERALL - WHITE 3XL	G	11.99		11.99	239.80
		Subtotal:					4,795.35
		G - GST 5%					239.79
		GST					
Outkast Oilfield Supplies Inc. GST: #R132364464							
Shipped By: Tracking Number:							
Comment: Terms: Net 30 Days						Total Amount	5,035.14
Sold By:							



# Daily Field Ticket

19145-016-0234

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
TOM 0S0  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**LOCATION:** 13-26-084-11W4

**JOB DESCRIPTION:** Greenfire Outage

**DATE:** 2019/10/8

**PO:** 90048

**JOB NO:** 19145

**ACTIVITIES:** 630 start permit FLHA and toolbox Dan Cole Zac Jeremy Dylan XV4309 remove and replace valve HV 4309 remove and replace valve FT 4300 roll out for inspections and reinstated close manway on b540 remove psv 4400 remove psv 4450 remove bell head of HLS Tyler, Mick Ashton hydro spools prep corialis meter bolt up and flange faces prep v562 stack for hydro jerry equipment operator Scott, Lenny moc packages, NDE ,pwht weld out remaining spools fab p220 a spool

## LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Kyle Scott	Foreman - General	<input type="checkbox"/>	8	\$75.05	5	\$112.58			\$1,163.30
Scott Patterson	QA/QC Manager	<input type="checkbox"/>	8	\$82.18	6	\$123.28			\$1,397.12
Danial Babchuk	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Zac Dunhame	3rd Year Apprentice	<input type="checkbox"/>	8	\$55.14	4	\$82.71			\$771.96
Lenny Rostotski	Welder w/Rig CWB or B-Pressure	<input type="checkbox"/>	12	\$124.65					\$1,495.80
Cole Thompson	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Gerald Burd	Equipment Operator - Principle	<input type="checkbox"/>	8	\$61.94	4	\$92.91			\$867.16
Tyler Horner	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Jeremy Herbin	2nd Year Apprentice	<input type="checkbox"/>	8	\$49.01	4	\$73.52			\$686.16
Mick Antos	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Ashton Van	2nd Year Apprentice	<input type="checkbox"/>	8	\$49.01	4	\$73.52			\$686.16
Dylan Brown	1st Year Apprentice	<input type="checkbox"/>	8	\$42.88	4	\$64.32			\$600.32

**Subtotal Labour:** **\$10,955.82**

## EQUIPMENT

Equipment	Qty	Rate Type	Rate	Total
3 Ton Picker/Tool Truck	1	Daily	\$414.00	\$414.00
Pickup - Crew Cab 4WD 1 Ton	3	Daily	\$270.00	\$810.00
H2S Monitor	3	Daily	\$25.94	\$77.82
Warehouse Trailer & Tools	1	Daily	\$130.00	\$130.00
Office Trailer	1	Daily	\$105.00	\$105.00

**Subtotal Equipment:** **\$1,536.82**

Total Labour: \$10,955.82

Total Equipment: \$1,536.82

Subtotal: \$12,492.64

**Total: \$12,492.64**





## Daily Field Ticket

19145-016-0234

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca

Supervisor Signature:

A handwritten signature in black ink, appearing to be "Kyle" followed by a stylized surname.

Client Signature:

A handwritten signature in black ink, appearing to be "Chad" followed by a stylized surname.

# Daily Field Ticket

19145-016-0235

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
TOM OSO  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**LOCATION:** 13-26-084-11W4

**JOB DESCRIPTION:** Greenfire Outage

**DATE:** 2019/10/8

**PO:** 90048

**JOB NO:** 19145

**ACTIVITIES:** 630 pm start permit FLHA and toolbox f360 deblind water/process f320 media fill v203 close manway and deblind psv removal e257 a & b deblinded prep area 500 rental equipment

## LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Taylor Brown	2nd Year Apprentice	<input type="checkbox"/>	8	\$49.01	4	\$73.52			\$686.16
Rick Dalgleish	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Will Bacon	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Jordan Brenin	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96

**Subtotal Labour:** **\$3,152.04**

## EQUIPMENT

Equipment	Qty	Rate Type	Rate	Total
Pickup - Crew Cab 4WD 1 Ton	1	Daily	\$270.00	\$270.00

**Subtotal Equipment:** **\$270.00**

Total Labour: \$3,152.04  
Total Equipment: \$270.00  
Subtotal: \$3,422.04

**Total:** **\$3,422.04**

**Supervisor Signature:**



**Client Signature:**





# Daily Field Ticket

19145-016-0237

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
TOM OSO  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**LOCATION:** 13-26-084-11W4

**JOB DESCRIPTION:** Greenfire Outage

**DATE:** 2019/10/9

**PO:** 90048

**JOB NO:** 19145

**ACTIVITIES:** 630 am start permit FLHA and toolbox Lenny, Scott moc work jerry running equipment as needed Danial Zac Dylan Cole mick Tyler Ashton XX 4445 replace valve steam building work completed

## LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Kyle Scott	Foreman - General	<input type="checkbox"/>	8	\$75.05	5	\$112.58			\$1,163.30
Scott Patterson	QA/QC Manager	<input type="checkbox"/>	8	\$82.18	4	\$123.28			\$1,150.56
Danial Babchuk	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Zac Dunhame	3rd Year Apprentice	<input type="checkbox"/>	8	\$55.14	4	\$82.71			\$771.96
Lenny Rostotski	Welder w/Rig CWB or B-Pressure	<input type="checkbox"/>	12	\$124.65					\$1,495.80
Cole Thompson	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Gerald Burd	Equipment Operator - Principle	<input type="checkbox"/>	8	\$61.94	4	\$92.91			\$867.16
Tyler Horner	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Mick Antos	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Ashton Van	2nd Year Apprentice	<input type="checkbox"/>	8	\$49.01	4	\$73.52			\$686.16
Dylan Brown	1st Year Apprentice	<input type="checkbox"/>	8	\$42.88	4	\$64.32			\$600.32

**Subtotal Labour:** **\$10,023.10**

## EQUIPMENT

Equipment	Qty	Rate Type	Rate	Total
3 Ton Picker/Tool Truck	1	Daily	\$414.00	\$414.00
Pickup - Crew Cab 4WD 1 Ton	3	Daily	\$270.00	\$810.00
H2S Monitor	3	Daily	\$25.94	\$77.82
Warehouse Trailer & Tools	1	Daily	\$130.00	\$130.00
Office Trailer	1	Daily	\$105.00	\$105.00

**Subtotal Equipment:** **\$1,536.82**

Total Labour: \$10,023.10

Total Equipment: \$1,536.82

Subtotal: \$11,559.92

**Total: \$11,559.92**

**Supervisor Signature:**

**Client Signature:**



# Daily Field Ticket

19145-016-0238

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
TOM OSO  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**LOCATION:** 13-26-084-11W4

**JOB DESCRIPTION:** Greenfire Outage

**DATE:** 2019/10/9

**PO:** 90048

**JOB NO:** 19145

**ACTIVITIES:** 630 pm shift start permit FLHA and toolbox PSV 2041 A installed PSV 2560 B installed PSV 4450 install PSV 2531 removed Psv V224 dump valve installed

## LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Taylor Brown	2nd Year Apprentice	<input type="checkbox"/>	8	\$49.01	4	\$73.52			\$686.16
Rick Dalglish	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Will Bacon	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Jordan Brenin	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96

**Subtotal Labour:** **\$3,152.04**

## EQUIPMENT

Equipment	Qty	Rate Type	Rate	Total
Pickup - Crew Cab 4WD 1 Ton	1	Daily	\$270.00	\$270.00

**Subtotal Equipment:** **\$270.00**

Total Labour: \$3,152.04

Total Equipment: \$270.00

Subtotal: \$3,422.04

**Total: \$3,422.04**

**Supervisor Signature:**

**Client Signature:**





# Daily Field Ticket

19145-016-0240

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
TOM OSO  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**LOCATION:** 13-26-084-11W4

**JOB DESCRIPTION:** Greenfire Outage

**DATE:** 2019/10/10

**PO:** 90048

**JOB NO:** 19145

**ACTIVITIES:** 630 am start jerry run equipment as needed Scott, Lenny moc completions on moc 100, 91, 09, 67 Tyler mick final NDE and pwht for p220a spool prepped for hydro place all corialis meters where they need to be for nights install pad 3 corialis meters assist with install of valves moc 100 Cole, Danial, Dylan Zac Ashton tank farm valves

## LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Kyle Scott	Foreman - General	<input type="checkbox"/>	8	\$75.05	5	\$112.58			\$1,163.30
Scott Patterson	QA/QC Manager	<input type="checkbox"/>	8	\$82.18	4	\$123.28			\$1,150.56
Danial Babchuk	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Zac Dunhame	3rd Year Apprentice	<input type="checkbox"/>	8	\$55.14	4	\$82.71			\$771.96
Lenny Rostotski	Welder w/Rig CWB or B-Pressure	<input type="checkbox"/>	12	\$124.65					\$1,495.80
Cole Thompson	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Gerald Burd	Equipment Operator - Principle	<input type="checkbox"/>	8	\$61.94	4	\$92.91			\$867.16
Tyler Horner	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Mick Antos	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Ashton Van	2nd Year Apprentice	<input type="checkbox"/>	8	\$49.01	4	\$73.52			\$686.16
Dylan Brown	1st Year Apprentice	<input type="checkbox"/>	8	\$42.88	4	\$64.32			\$600.32

**Subtotal Labour:** **\$10,023.10**

## EQUIPMENT

Equipment	Qty	Rate Type	Rate	Total
3 Ton Picker/Tool Truck	1	Daily	\$414.00	\$414.00
Pickup - Crew Cab 4WD 1 Ton	3	Daily	\$270.00	\$810.00
H2S Monitor	3	Daily	\$25.94	\$77.82
Warehouse Trailer & Tools	1	Daily	\$130.00	\$130.00
Office Trailer	1	Daily	\$105.00	\$105.00

**Subtotal Equipment:** **\$1,536.82**

Total Labour: \$10,023.10  
Total Equipment: \$1,536.82  
Subtotal: \$11,559.92

**Total:** **\$11,559.92**

**Supervisor Signature:**

**Client Signature:**



# Daily Field Ticket

19145-016-0242

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
TOM OSO  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**LOCATION:** 13-26-084-11W4

**JOB DESCRIPTION:** Greenfire Outage

**DATE:** 2019/10/10

**PO:** 90048

**JOB NO:** 19145

**ACTIVITIES:** 630:pm permit FLHA and toolbox corialis meters installed but one left to do FE 1311 and FE1231roll out and install on side v802 blind and open manway one 6" left e207 install studs and torque Psv removal of 5310, 5570, 2042 FE 8501 removed inspected and reinstated

## LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Taylor Brown	2nd Year Apprentice	<input type="checkbox"/>	8	\$49.01	4	\$73.52			\$686.16
Rick Dalgleish	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Will Bacon	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Jordan Brenin	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96

**Subtotal Labour:** **\$3,152.04**

## EQUIPMENT

Equipment	Qty	Rate Type	Rate	Total
Pickup - Crew Cab 4WD 1 Ton	1	Daily	\$270.00	\$270.00

**Subtotal Equipment:** **\$270.00**

Total Labour: \$3,152.04  
Total Equipment: \$270.00  
Subtotal: \$3,422.04

**Total: \$3,422.04**

**Supervisor Signature:**

**Client Signature:**



# Daily Field Ticket

19145-016-0243

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**LOCATION:** 13-26-084-11W4

**JOB DESCRIPTION:** Greenfire Outage

**DATE:** 2019/10/11

**PO:** 90048

**JOB NO:** 19145

**ACTIVITIES:** 630 am start permit FLHA and toolbox Scott, Lenny finish off moc 10 working on completing turnover packages Lenny assist with exchanger repair build new shoe for b510 piping Danial, Zac, Cole Dylan Jeremy tank farm work complete please flare valves, PVRV complete, over flow valves complete mick, Tyler, Ashton, E207 install piping and torq, torq channel head e210 install dollar plates and deblind torq clean area P220 a spool Installed pad 2 check valve hydros complete jerry equipment operator

## LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Kyle Scott	Foreman - General	<input type="checkbox"/>			13	\$112.58			\$1,463.54
Scott Patterson	QA/QC Manager	<input type="checkbox"/>			12	\$123.28			\$1,479.36
Danial Babchuk	Journeyman	<input type="checkbox"/>			12	\$88.07			\$1,056.84
Zac Dunhame	3rd Year Apprentice	<input type="checkbox"/>			12	\$82.71			\$992.52
Cole Thompson	Journeyman	<input type="checkbox"/>			12	\$88.07			\$1,056.84
Gerald Burd	Equipment Operator - Principle	<input type="checkbox"/>			12	\$92.91			\$1,114.92
Tyler Horner	Journeyman	<input type="checkbox"/>			12	\$88.07			\$1,056.84
Jeremy Herbin	2nd Year Apprentice	<input type="checkbox"/>			12	\$73.52			\$882.24
Mick Antos	Journeyman	<input type="checkbox"/>			12	\$88.07			\$1,056.84
Ashton Van	2nd Year Apprentice	<input type="checkbox"/>			12	\$73.52			\$882.24
Dylan Brown	1st Year Apprentice	<input type="checkbox"/>			12	\$64.32			\$771.84

**Subtotal Labour:** **\$11,814.02**

## EQUIPMENT

Equipment	Qty	Rate Type	Rate	Total
3 Ton Picker/Tool Truck	1	Daily	\$414.00	\$414.00
Pickup - Crew Cab 4WD 1 Ton	3	Daily	\$270.00	\$810.00
H2S Monitor	3	Daily	\$25.94	\$77.82
Warehouse Trailer & Tools	1	Daily	\$130.00	\$130.00
Office Trailer	1	Daily	\$105.00	\$105.00

**Subtotal Equipment:** **\$1,536.82**

Total Labour: \$11,814.02

Total Equipment: \$1,536.82

Subtotal: \$13,350.84

**Total: \$13,350.84**

**Supervisor Signature:**

**Client Signature:**



## Daily Field Ticket

19145-016-0243

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
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## Daily Field Ticket

19145-016-0245

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
TOM OSO  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**LOCATION:** 13-26-084-11W4

**JOB DESCRIPTION:** Greenfire Outage

**DATE:** 2019/10/12

**PO:** 90048

**JOB NO:** 19145

**ACTIVITIES:** 630 am start permit FLHA and toolbox Danial, Cole , Zac, dylan, v560 stack install start HLS reinstatement clean up tank farm area mick, Tyler , Ashton, Roy install dollar plates on E256 A&B west side install dollar plates on E254 A&B west side jerry equipment operator as needed travel home Lenny assist with the repair of exchangers cut off vent stack and weld bird cage travel home Scott complete turnover binders add the requested paperwork from client

### LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Kyle Scott	Foreman - General	<input type="checkbox"/>		\$75.05	13	\$112.58			\$1,463.54
Scott Patterson	QA/QC Manager	<input type="checkbox"/>			12	\$123.28		\$82.18	\$1,479.36
Ashton Van	2nd Year Apprentice	<input type="checkbox"/>			7	\$73.52	7	\$49.01	\$857.71
Zac Dunhame	3rd Year Apprentice	<input type="checkbox"/>			12	\$82.71			\$992.52
Lenny Rostotski	Welder w/Rig CWB or B-Pressure	<input type="checkbox"/>			7	\$124.65	7	\$124.65	\$1,745.10
Cole Thompson	Journeyman	<input type="checkbox"/>			12	\$88.07			\$1,056.84
Gerald Burd	Equipment Operator - Principle	<input type="checkbox"/>			9	\$92.91	5	\$61.94	\$1,145.89
Tyler Horner	Journeyman	<input type="checkbox"/>			12	\$88.07			\$1,056.84
Mick Antos	Journeyman	<input type="checkbox"/>			12	\$88.07			\$1,056.84
Danial Babchuk	Journeyman	<input type="checkbox"/>			12	\$88.07			\$1,056.84
Dylan Brown	1st Year Apprentice	<input type="checkbox"/>			12	\$64.32			\$771.84
Jordan Brenin	Journeyman	<input type="checkbox"/>					7	\$58.71	\$410.97
Roy Reed	3rd Year Apprentice	<input type="checkbox"/>			12	\$82.71			\$992.52

**Subtotal Labour:** **\$14,086.81**

### EQUIPMENT

Equipment	Qty	Rate Type	Rate	Total
3 Ton Picker/Tool Truck	1	Daily	\$414.00	\$414.00
Pickup - Crew Cab 4WD 1 Ton	3	Daily	\$270.00	\$810.00
H2S Monitor	3	Daily	\$25.94	\$77.82
Warehouse Trailer & Tools	1	Daily	\$130.00	\$130.00
Office Trailer	1	Daily	\$105.00	\$105.00

**Subtotal Equipment:** **\$1,536.82**

**Total Labour:** **\$14,086.81**

**Total Equipment:** **\$1,536.82**

**Subtotal:** **\$15,623.63**

**Total:** **\$15,623.63**



## Daily Field Ticket

19145-016-0245

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca

Supervisor Signature:

A handwritten signature in black ink, appearing to be "K. Smith", written over a large, faint, light blue circular watermark.

Client Signature:

A handwritten signature in black ink, appearing to be "B. G. R.", written over a large, faint, light blue circular watermark.



## Daily Field Ticket

19145-016-0246

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**LOCATION:** 13-26-084-11W4

**JOB DESCRIPTION:** Greenfire Outage

**DATE:** 2019/10/11

**PO:** 90048

**JOB NO:** 19145

**ACTIVITIES:** 630 pm start permit FLHA and toolbox v802 close manway and deblind v202 close manway and deblind v252 close manway and deblind f360 install Psv close manway and deblind f320 close manway and deblind Psv 4400 b installed

### LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Taylor Brown	2nd Year Apprentice	<input type="checkbox"/>			12	\$73.52			\$882.24
Rick Dalgleish	Journeyman	<input type="checkbox"/>			12	\$88.07			\$1,056.84
Will Bacon	Journeyman	<input type="checkbox"/>			12	\$88.07			\$1,056.84
Jordan Brenin	Journeyman	<input type="checkbox"/>			12	\$88.07			\$1,056.84

**Subtotal Labour:** **\$4,052.76**

### EQUIPMENT

Equipment	Qty	Rate Type	Rate	Total
Pickup - Crew Cab 4WD 1 Ton	1	Daily	\$270.00	\$270.00

**Subtotal Equipment:** **\$270.00**

Total Labour: \$4,052.76  
Total Equipment: \$270.00  
Subtotal: \$4,322.76

**Total: \$4,322.76**

**Supervisor Signature:**

**Client Signature:**



## Daily Field Ticket

19145-016-0250

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
TOM OSO  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**LOCATION:** 13-26-084-11W4

**JOB DESCRIPTION:** Greenfire Outage

**DATE:** 2019/10/12

**PO:** 90048

**JOB NO:** 19145

**ACTIVITIES:** 630 pm permit FLHA and toolbox v560 close manway and deblind v561 close manway and deblind v562 close manway and deblind e354 a install dollar plate e356 a install dollar plate

### LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Taylor Brown	2nd Year Apprentice	<input type="checkbox"/>			12	\$73.52			\$882.24
Rick Dalgleish	Journeyman	<input type="checkbox"/>			12	\$88.07			\$1,056.84
Will Bacon	Journeyman	<input type="checkbox"/>			12	\$88.07			\$1,056.84

**Subtotal Labour:** **\$2,995.92**

### EQUIPMENT

Equipment	Qty	Rate Type	Rate	Total
Pickup - Crew Cab 4WD 1 Ton	1	Daily	\$270.00	\$270.00

**Subtotal Equipment:** **\$270.00**

Total Labour: \$2,995.92

Total Equipment: \$270.00

Subtotal: \$3,265.92

**Total: \$3,265.92**

**Supervisor Signature:**

**Client Signature:**





# Daily Field Ticket

19145-016-0251

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
TOM OSO  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**LOCATION:** 13-26-084-11W4

**JOB DESCRIPTION:** Greenfire Outage

**DATE:** 2019/10/13

**PO:** 90048

**JOB NO:** 19145

**ACTIVITIES:** 630 am start permit FLHA and toolbox Danial Cole Zac SE430 Install Psv, bell head, piping and valves f440c remove 3" blind Tyler mick install belly dump spools on v180 and v 185 install dollar plates on e354&356 exchangers Scott finish off binders and travel home clean up from everyone

## LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Kyle Scott	Foreman - General	<input type="checkbox"/>	8	\$75.05	5	\$112.58			\$1,163.30
Scott Patterson	QA/QC Manager	<input type="checkbox"/>	5	\$82.18	7	\$123.28			\$1,273.86
Zac Dunhame	3rd Year Apprentice	<input type="checkbox"/>	8	\$55.14	4	\$82.71			\$771.96
Cole Thompson	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Tyler Horner	Journeyman	<input type="checkbox"/>	8	\$58.71		\$88.07	6	\$58.71	\$821.94
Mick Antos	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Danial Babchuk	Journeyman	<input type="checkbox"/>	8	\$58.71		\$88.07	6	\$58.71	\$821.94
Clinton Casey	Journeyman	<input type="checkbox"/>					6	\$58.71	\$352.26
Dylan Brown	1st Year Apprentice	<input type="checkbox"/>					6	\$42.88	\$257.28
Roy Reed	3rd Year Apprentice	<input type="checkbox"/>					6	\$55.14	\$330.84

**Subtotal Labour:** **\$7,437.30**

## EQUIPMENT

Equipment	Qty	Rate Type	Rate	Total
3 Ton Picker/Tool Truck	1	Daily	\$414.00	\$414.00
Pickup - Crew Cab 4WD 1 Ton	2	Daily	\$270.00	\$540.00
H2S Monitor	3	Daily	\$25.94	\$77.82
Warehouse Trailer & Tools	1	Daily	\$130.00	\$130.00
Office Trailer	1	Daily	\$105.00	\$105.00

**Subtotal Equipment:** **\$1,266.82**

Total Labour: \$7,437.30

Total Equipment: \$1,266.82

Subtotal: \$8,704.12

**Total: \$8,704.12**

**Supervisor Signature:**

**Client Signature:**



## Daily Field Ticket

19145-016-0252

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
TOM OSO  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**LOCATION:** 13-26-084-11W4

**JOB DESCRIPTION:** Greenfire Outage

**DATE:** 2019/10/13

**PO:** 90048

**JOB NO:** 19145

**ACTIVITIES:** 630 pm permit FLHA and toolbox clean up all deficiencies clean up area

### LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Taylor Brown	2nd Year Apprentice	<input type="checkbox"/>	8	\$49.01	4	\$73.52			\$686.16
Rick Dalgleish	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Will Bacon	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96

**Subtotal Labour:** **\$2,330.08**

### EQUIPMENT

Equipment	Qty	Rate Type	Rate	Total
Pickup - Crew Cab 4WD 1 Ton	1	Daily	\$270.00	\$270.00

**Subtotal Equipment:** **\$270.00**

Total Labour: \$2,330.08  
Total Equipment: \$270.00  
Subtotal: \$2,600.08

**Total:** **\$2,600.08**

**Supervisor Signature:**

**Client Signature:**



# Daily Field Ticket

19145-016-0253

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
TOM 0S0  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**LOCATION:** 13-26-084-11W4

**JOB DESCRIPTION:** Greenfire Outage

**DATE:** 2019/10/14

**PO:** 90048

**JOB NO:** 19145

**ACTIVITIES:** 630 am start permit FLHA and toolbox clean up deficiencies clean up area clean up Crib and Office Trailer demob

## LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Kyle Scott	Foreman - General	<input type="checkbox"/>		\$75.05	12	\$112.58		\$75.05	\$1,350.96
Zac Dunhame	3rd Year Apprentice	<input type="checkbox"/>		\$55.14	12	\$82.71		\$55.14	\$992.52
Cole Thompson	Journeyman	<input type="checkbox"/>		\$58.71	12	\$88.07		\$58.71	\$1,056.84
Mick Antos	Journeyman	<input type="checkbox"/>		\$58.71	12	\$88.07		\$58.71	\$1,056.84
Taylor Brown	2nd Year Apprentice	<input type="checkbox"/>					6	\$49.01	\$294.06
Rick Dalglish	Journeyman	<input type="checkbox"/>					7	\$58.71	\$410.97
Will Bacon	Journeyman	<input type="checkbox"/>					7	\$58.71	\$410.97

**Subtotal Labour:** **\$5,573.16**

## EQUIPMENT

Equipment	Qty	Rate Type	Rate	Total
3 Ton Picker/Tool Truck	1	Daily	\$414.00	\$414.00
Pickup - Crew Cab 4WD 1 Ton	1	Daily	\$270.00	\$270.00
H2S Monitor	3	Daily	\$25.94	\$77.82
Office Trailer	1	Daily	\$105.00	\$105.00

**Subtotal Equipment:** **\$866.82**

Total Labour: \$5,573.16

Total Equipment: \$866.82

Subtotal: \$6,439.98

**Total: \$6,439.98**

**Supervisor Signature:**

**Client Signature:**



# Daily Field Ticket

19145-016-0256

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**LOCATION:** 13-26-084-11W4

**JOB DESCRIPTION:** Greenfire Outage

**DATE:** 2019/10/15

**PO:** 90048

**JOB NO:** 19145

**ACTIVITIES:** 630 start permit FLHA and toolbox ops assist clean up area

## LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Kyle Scott	Foreman - General	<input type="checkbox"/>	8	\$75.05		\$112.58	7	\$75.05	\$1,125.75
Zac Dunhame	3rd Year Apprentice	<input type="checkbox"/>	5	\$55.14		\$82.71	7	\$55.14	\$661.68
Cole Thompson	Journeyman	<input type="checkbox"/>	5	\$58.71		\$88.07	5	\$58.71	\$587.10
Mick Antos	Journeyman	<input type="checkbox"/>		\$58.71		\$88.07	6	\$58.71	\$352.26
Freddy Smith	Truck Driver	<input type="checkbox"/>					18	\$49.50	\$891.00

**Subtotal Labour:** **\$3,617.79**

## EQUIPMENT

Equipment	Qty	Rate Type	Rate	Total
3 Ton Picker/Tool Truck	1	Daily	\$414.00	\$414.00
Pickup - Crew Cab 4WD 1 Ton	1	Daily	\$270.00	\$270.00
H2S Monitor	3	Daily	\$25.94	\$77.82
Warehouse Trailer & Tools	1	Daily	\$130.00	\$130.00
Office Trailer	1	Daily	\$105.00	\$105.00
Tri-Drive Winch Truck & Trailer	18	Hourly	\$170.00	\$3,060.00

**Subtotal Equipment:** **\$4,056.82**

Total Labour: \$3,617.79

Total Equipment: \$4,056.82

Subtotal: \$7,674.61

**Total: \$7,674.61**

**Supervisor Signature:**



**Client Signature:**







Box 1379  
42A McCool Cres  
Crossfield, AB T0M 0S0

## Invoice

Invoice#: 20180594

Date: 10/23/2019

**Billed To:** Greenfire Hangingstone Operating Corporation  
1650, 444 - 5 Avenue SW  
Calgary AB T2P 2T8

**Project:** Greenfire MOC Work  
1650, 444 - 5 Avenue SW  
Calgary AB T2P 2T8

**Due Date:** 10/23/2019

**Terms:**

**Order#** 900075

Description	Unit	Quantity	Price	Amount
As per attached spreadsheet		1.0000	54,127.800000	54,127.80

Total:	54,127.80	Holdback:	0.00	Invoice Amount:	54,127.80
		GST Taxable:	54,127.80	GST:	2,706.39
		PST Taxable:	0.00	PST:	0.00
				Invoice Total:	56,834.19
				<b>Amount Due</b>	<b>56,834.19</b>
GST/HST Id#: 139628697RT0001					

A service charge of 10 %  
per month will be charged on all amounts  
overdue on regular statement dates.

*Thank you for your prompt payment!*



Field Ticket No.	Job No.	Field Ticket Date	Location	Total Billable (\$)
19146-016-0230	19146	2019-10-07	13-26-084-11W4	\$1,593.92
19146-016-0232	19146	2019-10-08	13-26-084-11W4	\$10,035.00
19146-016-0236	19146	2019-10-09	13-26-084-11W4	\$2,280.08
19146-016-0239	19146	2019-10-10	13-26-084-11W4	\$8,257.83
19146-016-0241	19146	2019-10-11	13-26-084-11W4	\$4,886.26
19146-016-0244	19146	2019-10-12	13-26-084-11W4	\$7,563.25
19146-016-0258	19146	2019-10-15	13-26-084-11W4	\$15,991.46
19146-016-0260	19146	2019-10-22	13-26-084-11W4	\$3,520.00
			Total	\$54,127.80



## Daily Field Ticket

19146-016-0230

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**LOCATION:** 13-26-084-11W4

**JOB DESCRIPTION:** MOC Work

**DATE:** 2019/10/7

**PO:** 900075

**JOB NO:** 19146

**ACTIVITIES:** 630 am start permit FLHA and toolbox moc 09 bake out complete and tie in ready for NDE and pwht pwht moc 09spools 50% completed moc 100 75% completed on pwht moc 13 100% completed ready for NDE moc 67 hydro complete ready for hot tap moc 67 extra material on. site

### LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Clinton Casey	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Roy Reed	3rd Year Apprentice	<input type="checkbox"/>	8	\$55.14	4	\$82.71			\$771.96

**Subtotal Labour:** **\$1,593.92**

Total Labour: \$1,593.92

Subtotal: \$1,593.92

**Total: \$1,593.92**

**Supervisor Signature:**

**Client Signature:**



# Daily Field Ticket

19146-016-0232

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
TOM OS0  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**LOCATION:** 13-26-084-11W4

**JOB DESCRIPTION:** MOC Work

**DATE:** 2019/10/8

**PO:** 900075

**JOB NO:** 19146

**ACTIVITIES:** 630 am start permit, toolbox, FLHA moc 09 pwht completed on spool moc 91 spool hydro complete moc 100 8" valve, tee hydro completed P220 a spool material received and welded p220 a spool NDE complete and prepped for pwht

## LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Clinton Casey	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Roy Reed	3rd Year Apprentice	<input type="checkbox"/>	8	\$55.14	4	\$82.71			\$771.96

**Subtotal Labour:** **\$1,593.92**

## MISC

Description	Qty	Rate Type	Rate	Upcharge (%)	Rate (marked-up)	Total
NDE	1	Each	\$4,006.00	10	\$4,406.60	\$4,406.60
NDE	1	Each	\$2,733.00	10	\$3,006.30	\$3,006.30

**Subtotal Misc:** **\$7,412.90**

## THIRD PARTY

Description	Qty	Rate Type	Rate	Upcharge (%)	Rate (marked-up)	Total
Swift Oilfield Supply INV#S-32717-02	1	Each	\$49.41	10%	\$54.35	\$54.35
Swift Oilfield Supply INV#S-32717-01	1	Each	\$885.30	10%	\$973.83	\$973.83

**Subtotal Third Party:** **\$1,028.18**

Total Labour: \$1,593.92

Total Misc: \$7,412.90

Total Third Party: \$1,028.18

Subtotal: \$10,035.00

**Total: \$10,035.00**

**Supervisor Signature:**

**Client Signature:**



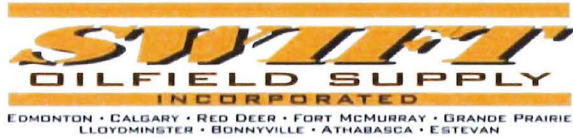




## Daily Field Ticket

19146-016-0232

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca



Date	Invoice No.
10/08/2019	S-32717-01
Terms	Net 30 Days

Please remit all payments to:  
6205 - 97 Street NW, Edmonton, AB T6E 3J5  
Toll Free: 1-888-423-6979 accounting@swiftsupply.ca

BOOM CONSTRUCTION LTD.  
PO BOX 1379 42A MCCOOL CRESCENT  
CROSSFIELD AB T0M 0S0

Your P.O. No.	Ordered By	Packing Slip #	Location
	SCOTT	S-32717-01	

Description	Qty	Rate	Amount
6" 150# SCH 40 (STD) RFWN FLANGE SA-105N	3.0000	\$39.31	\$117.93
6" SCH 40 (STD) BW TEE SA-234 WPB	1.0000	\$35.56	\$35.56
6" 150# RF GATE VALVE TAG: GA-1010	1.0000	\$656.67	\$656.67
6" 150# RF BLIND FLANGE SA-105N	1.0000	\$35.02	\$35.02
2" 150# SCH 80 (XH) RFWN FLANGE SA-350-LF2	2.0000	\$11.20	\$22.40
2" x 4" SCH 80 SMLS NIPPLE PBE SA-333-6	1.0000	\$11.76	\$11.76
2" SCH 80 (XH) BW LR 90 ELBOW SA-420-WPL6	1.0000	\$5.96	\$5.96
		<b>Subtotal</b>	\$885.30
		<b>GST</b>	\$44.27
		<b>Total</b>	\$929.57

**Thank you for your Business, from everyone at SWIFT!!**

All commercial transactions are subject to the terms of sale of Swift Oilfield Supply Inc.. All Pricing is valid for 15 days unless otherwise stated. Items may be subject to prior sale. Terms are Net 30 to and pricing is FOB our specified Swift location unless otherwise stated. Partial orders are subject to review. Any product returns must be authorized by Swift Oilfield Supply Inc. and may be subject to restocking charges. Cancellations after receipt of purchase order must be authorized by Swift and may be subject to cancellation charges at the discretion of Swift Oilfield Supply Inc. Manufacturer direct orders may be deemed non-cancellable at the discretion of Swift Oilfield Supply Inc. No returns are available on: altered, machined, coated, welded, weld prepared or used products. All product to remain property of Swift Oilfield Supply Inc. until paid in full. Any short or damage issues must be reported within 5 days of receipt of product. Swift Oilfield Supply Inc. reserves the right to maintain and register security against any invoice or product until account status is paid to the satisfaction of Swift Oilfield Supply Inc.

GST No. 854628971

Page 1 of 1



## Daily Field Ticket

19146-016-0236

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**LOCATION:** 13-26-084-11W4

**JOB DESCRIPTION:** MOC Work

**DATE:** 2019/10/9

**PO:** 900075

**JOB NO:** 19146

**ACTIVITIES:** 630 am start permits FLHA and toolbox moc 13 installed and complete moc 67 installed and completed piping moc 9 pwht completed moc 9 spool hydro and NDE completed moc 10 spool completed and hydro complete ready for install moc 91 tie in weld completed ready for NDE moc 100 6" tie ins hydro completed moc 100 all post weld heat treat completed ready for final NDE and hydro

### LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Clinton Casey	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Roy Reed	3rd Year Apprentice	<input type="checkbox"/>	8	\$55.14	4	\$82.71			\$771.96
Jeremy Herbin	2nd Year Apprentice	<input type="checkbox"/>	8	\$49.01	4	\$73.52			\$686.16

**Subtotal Labour:** **\$2,280.08**

Total Labour: \$2,280.08

Subtotal: \$2,280.08

**Total: \$2,280.08**

**Supervisor Signature:**

**Client Signature:**



# Daily Field Ticket

19146-016-0239

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
TOM OSO  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**LOCATION:** 13-26-084-11W4

**JOB DESCRIPTION:** MOC Work

**DATE:** 2019/10/10

**PO:** 900075

**JOB NO:** 19146

**ACTIVITIES:** 630 am start permit FLHA and toolbox final NDE on moc 91 final NDE on moc 09 hydro test moc 100 8" tie ins and 6" valves and tees completed hydro moc 91 tie hydro moc 09 tie in install moc 91 piping install moc 09 piping

## LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Clinton Casey	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Roy Reed	3rd Year Apprentice	<input type="checkbox"/>	8	\$55.14	4	\$82.71			\$771.96
Jeremy Herbin	2nd Year Apprentice	<input type="checkbox"/>	8	\$49.01	4	\$73.52			\$686.16

**Subtotal Labour:** **\$2,280.08**

## MISC

Description	Qty	Rate Type	Rate	Upcharge (%)	Rate (marked-up)	Total
NDE	1	Each	\$2,560.00	10	\$2,816.00	\$2,816.00
cold tap	1	Each	\$2,874.32	10	\$3,161.752	\$3,161.75

**Subtotal Misc:** **\$5,977.75**

Total Labour: \$2,280.08

Total Misc: \$5,977.75

Subtotal: \$8,257.83

**Total: \$8,257.83**

**Supervisor Signature:**

**Client Signature:**





# Daily Field Ticket

19146-016-0241

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas  
**LOCATION:** 13-26-084-11W4  
**JOB DESCRIPTION:** MOC Work

**DATE:** 2019/10/11  
**PO:** 900075  
**JOB NO:** 19146

**ACTIVITIES:** 630 am start permit FLHA and toolbox moc 10 completed torque sheets completed hydro p220 a spool

## LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Clinton Casey	Journeyman	<input type="checkbox"/>		\$58.71	12	\$88.07			\$1,056.84
Roy Reed	3rd Year Apprentice	<input type="checkbox"/>		\$55.14	12	\$82.71			\$992.52

**Subtotal Labour:** **\$2,049.36**

## MISC

Description	Qty	Rate Type	Rate	Upcharge (%)	Rate (marked-up)	Total
NDE	1	Each	\$2,579.00	10	\$2,836.90	\$2,836.90

**Subtotal Misc:** **\$2,836.90**

Total Labour: \$2,049.36

Total Misc: \$2,836.90

Subtotal: \$4,886.26

**Total: \$4,886.26**

**Supervisor Signature:**

**Client Signature:**



# Daily Field Ticket

19146-016-0244

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**LOCATION:** 13-26-084-11W4

**JOB DESCRIPTION:** MOC Work

**DATE:** 2019/10/12

**PO:** 900075

**JOB NO:** 19146

**ACTIVITIES:** 630 am start permit FLHA and toolbox install chain ops on moc that require them fix all deficiencies finish off packages

## LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Clinton Casey	Journeyman	<input type="checkbox"/>		\$58.71	12	\$88.07		\$58.71	\$1,056.84
Jeremy Herbin	2nd Year Apprentice	<input type="checkbox"/>		\$49.01	8	\$73.52	5	\$49.01	\$833.21

**Subtotal Labour:** **\$1,890.05**

## MISC

Description	Qty	Rate Type	Rate	Upcharge (%)	Rate (marked-up)	Total
NDE	1	Each	\$5,157.45	10	\$5,673.195	\$5,673.20

**Subtotal Misc:** **\$5,673.20**

Total Labour: \$1,890.05

Total Misc: \$5,673.20

Subtotal: \$7,563.25

**Total: \$7,563.25**

**Supervisor Signature:**

**Client Signature:**



# Daily Field Ticket

19146-016-0258

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
TOM OS0  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**LOCATION:** 13-26-084-11W4

**JOB DESCRIPTION:** MOC Work

**DATE:** 2019/10/15

**PO:** 900075

**JOB NO:** 19146

**ACTIVITIES:** continental stress relieving MRC GLOBAL

## MISC

Description	Qty	Rate Type	Rate	Upcharge (%)	Rate (marked-up)	Total
pwht	1	Each	\$13,644.54	10	\$15,008.994	\$15,008.99
materials for moc	1	Each	\$893.15	10	\$982.465	\$982.47

**Subtotal Misc:** **\$15,991.46**

Total Misc: \$15,991.46

Subtotal: \$15,991.46

**Total: \$15,991.46**

**Supervisor Signature:**

**Client Signature:**



# Daily Field Ticket

19146-016-0260

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomld.ca

**CUSTOMER:** Green Fire Oil & Gas

**LOCATION:** 13-26-084-11W4

**JOB DESCRIPTION:** MOC Work

**DATE:** 2019/10/22

**PO:** 900075

**JOB NO:** 19146

**ACTIVITIES:** third party hydro test tools

## MISC

Description	Qty	Rate Type	Rate	Upcharge (%)	Rate (marked-up)	Total
hydro test tools	1	Each	\$3,200.00	10	\$3,520.00	\$3,520.00

**Subtotal Misc:** **\$3,520.00**

**Total Misc:** **\$3,520.00**

**Subtotal:** **\$3,520.00**

**Total:** **\$3,520.00**

**Supervisor Signature:**

**Client Signature:**





Box 1379  
42A McCool Cres  
Crossfield, AB T0M 0S0

## Invoice

Invoice#: 20180611

Date: 11/06/2019

**Billed To:** Greenfire Hangingstone Operating Corporation  
1650, 444 - 5 Avenue SW  
Calgary AB T2P 2T8

**Project:** Fabricate 4 Spools  
1650, 444 - 5 Avenue SW  
Calgary AB T2P 2T8

**Due Date:** 11/06/2019

**Terms:**

**Order#** 90080

Description	Unit	Quantity	Price	Amount
Ticket #19138-016-0174		1.0000	4,311.240000	4,311.24

Total:	4,311.24	Holdback:	0.00	Invoice Amount:	4,311.24
		GST Taxable:	4,311.24	GST:	215.56
		PST Taxable:	0.00	PST:	0.00
				Invoice Total:	4,526.80
				<b>Amount Due</b>	<b>4,526.80</b>
GST/HST Id#: 139628697RT0001					

A service charge of 2 %  
per month will be charged on all amounts  
overdue on regular statement dates.

Thank you for your prompt payment!



# Daily Field Ticket

19138-016-0174

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
TOM OSO  
403.946 0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**LOCATION:**

**JOB DESCRIPTION:** Fabricate 4 spools

**DATE:** 2019/9/4

**PO:** 90080

**JOB NO:** 19138

**ACTIVITIES:** pick up material receive material fabricate 4 spools load spools onto Trailer

## LABOUR

Trade	LOA	REG Hrs	OT Hrs	TT Hrs
Superintendent	<input type="checkbox"/>	4		
Welder w/Rlg CWB or B-Pressure	<input type="checkbox"/>	8		
Welders Helper	<input type="checkbox"/>	8		

## THIRD PARTY

Description	Qty	Rate Type	Upcharge (%)
Xceed Oilfield	1	Each	10%

**Supervisor Signature:**

**Client Signature:**



# Daily Field Ticket

19138-016-0174

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
TOM OSO  
403.946.0066  
www.boomild.ca



104 - 6439 - 67 STREET  
RED DEER, ALBERTA T4P 1A3  
Phone: 403-356-0044  
Fax: 403-356-0174



INVOICE  
112338  
04-Sep-2019 11:52 am  
Page 1 of 1  
P.O. #  
Buyer:  
Created by:  
Invoiced by: Kaylin Argent  
Email: accounting@xceedoilfieldsupply.com

Sold to: BOOCON  
BOOM CONSTRUCTION LTD.  
PO BOX 1379, MCCOOL CRESCENT  
CROSSFIELD, AB T0M 0S0

Ship to:  
CUSTOMER PICKUP  
O/B: KYLE SCOTT

Item	Description	Ordered	Shipped	Unit S	Extended S
* FLA- 52205D	GRAYLOC HUB, BW, 2-1/2-3GR27, 3" S80, SA105/SA350-LF2 CL1	4.00	4.00	461.63	1,846.52
WEL- 30X90	3" XH LR 90 ELBOW A234-WPB HT# 18A2875	2.00	2.00	13.36	26.76
WEL- 30X45	3" XH LR 45 ELBOW A234-WPB HT# A448, B185, 81A00119	4.00	4.00	8.73	34.92
PIP- 3080	3" S/80 SMLS SA106B/CSA GR. 290 CAT 1 SRL BE HT# A8297	21.00	21.00	11.89	249.69
* FLA- 30300XRWN	3" 300# XH RFWN FLANGE A105N HT# 812254	4.00	4.00	27.57	110.28
GAS- 60600CGI	8" 600# SWI GASKET 316IR-316-FG, ASME B16.20	6.00	6.00	11.77	70.62
PIC- 1003U	1" X 3/8" U-BOLT	10.00	10.00	0.86	8.60
PIC- 2003U	2" X 3/8" U-BOLT	6.00	6.00	1.38	8.28
	Goods & Services Tax	1.00	1.00	117.78	117.78

Stocked Items	Cores	Enviro Charges	Misc Charges	Other Charges	GST	Payments	Document Total
2,355.67	0.00	0.00	0.00	0.00	117.78	0.00	2,473.45

Please refer to our terms & conditions on our website.  
www.Xceedoilfieldsupply.com  
"We appreciate your business"

NET 30

Approved by:

GST # 819572777RT001



Box 1379  
42A McCool Cres  
Crossfield, AB T0M 0S0

## Invoice

Invoice#: 20180644

Date: 11/27/2019

**Billed To:** Greenfire Hangingstone Operating Corporation  
1650, 444 - 5 Avenue SW  
Calgary AB T2P 2T8

**Project:** Pipe Bridge Reinforcement  
1650, 444 - 5 Avenue SW  
Calgary AB T2P 2T8

**Due Date:** 11/27/2019

**Terms:**

**Order#** 201677

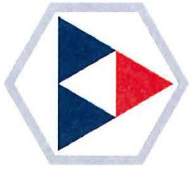
Description	Unit	Quantity	Price	Amount
As per attached spreadsheet		1.0000	42,639.190000	42,639.19

Total:	42,639.19	Holdback:	0.00	Invoice Amount:	42,639.19
		GST Taxable:	42,639.19	GST:	2,131.96
		PST Taxable:	0.00	PST:	0.00
				Invoice Total:	44,771.15
				<b>Amount Due</b>	<b>44,771.15</b>
GST/HST Id#: 139628697RT0001					

A service charge of 2 %  
per month will be charged on all amounts  
overdue on regular statement dates.

Thank you for your prompt payment!





**BOOM**  
CONSTRUCTION

Field Ticket No.	Job No.	Field Ticket Date	Total Billable (\$)
19190-016-0266	19190	2019-11-15	\$4,351.36
19190-016-0267	19190	2019-11-16	\$4,678.74
19190-016-0269	19190	2019-11-17	\$4,704.68
19190-016-0270	19190	2019-11-18	\$4,124.68
19190-016-0271	19190	2019-11-19	\$4,704.68
19190-016-0276	19190	2019-11-20	\$4,704.68
19190-016-0277	19190	2019-11-21	\$4,704.68
19190-016-0278	19190	2019-11-22	\$5,385.38
19190-016-0279	19190	2019-11-23	\$5,280.31
		Total	\$42,639.19



# Daily Field Ticket

19190-016-0266

Boom Construction Ltd  
42A McCool Crescent Crossfield AB  
TOM OSC  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas  
**LOCATION:** South Of Fort MacMurray  
**JOB DESCRIPTION:**

**DATE:** 2019/11/15  
**PO:**  
**JOB NO:** 19190

**ACTIVITIES:** travel from Crossfield Alberta to site orientations and safety paperwork assist with pile layout scope job

## LABOUR

Trade	LOA	REG Hrs	OT Hrs	TT Hrs
Foreman - General	<input type="checkbox"/>	5		7
Journeyman	<input type="checkbox"/>	5		7
1st Year Apprentice	<input type="checkbox"/>	5		7
Welder w/Rig CWB or B-Pressure	<input type="checkbox"/>	12		

## EQUIPMENT

Equipment	Qty	Rate Type
200 Amp Welder	1	Daily
3 Ton Picker/Tool Truck	1	Daily
Pickup - Crew Cab 4WD 1 Ton	1	Daily
H2S Monitor	2	Daily

**Supervisor Signature:**

**Client Signature:**

  
Jerry Hansen Nov 25/19.



# Daily Field Ticket

19190-016-0267

Boom Construction Ltd  
42A McCool Crescent Crossfield AB  
TOM OSC  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas  
**LOCATION:** South Of Fort MacMurray  
**JOB DESCRIPTION:**

**DATE:** 2019/11/16  
**PO:**  
**JOB NO:** 19190

**ACTIVITIES:** tool box and FLHA shoot in piles for cut off and capping receive and offload material layout steel and start cutting and tacking

## LABOUR

Trade	LOA	REG Hrs	OT Hrs	TT Hrs
Foreman - General	<input type="checkbox"/>	8	4	
Journeyman	<input type="checkbox"/>	8	4	
1st Year Apprentice	<input type="checkbox"/>	8	4	
Welder w/Rig CWB or B-Pressure	<input type="checkbox"/>	12		

## EQUIPMENT

Equipment	Qty	Rate Type
200 Amp Welder	1	Daily
3 Ton Picker/Tool Truck	1	Daily
Pickup - Crew Cab 4WD 1 Ton	1	Daily
H2S Monitor	1	Daily

**Supervisor Signature:**

**Client Signature:**

Jerry Hansen Nov 25/19.

# Daily Field Ticket

19190-016-0269

Boom Construction Ltd  
42A McCool Crescent Crossfield AB  
TOM OSC  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas  
**LOCATION:** South Of Fort MacMurray  
**JOB DESCRIPTION:**

**DATE:** 2019/11/17  
**PO:**  
**JOB NO:** 19190

**ACTIVITIES:** tool box and FLHA bridge structural fabrication

## LABOUR

Trade	LOA	REG Hrs	OT Hrs	TT Hrs
Foreman - General	<input type="checkbox"/>	8	4	
Journeyman	<input type="checkbox"/>	8	4	
1st Year Apprentice	<input type="checkbox"/>	8	4	
Welder w/Rig CWB or B-Pressure	<input type="checkbox"/>	12		

## EQUIPMENT

Equipment	Qty	Rate Type
200 Amp Welder	1	Daily
3 Ton Picker/Tool Truck	1	Daily
Pickup - Crew Cab 4WD 1 Ton	1	Daily
H2S Monitor	2	Daily

**Supervisor Signature:**



**Client Signature:**



Jerry Hansen Nov 25/19.





# Daily Field Ticket

19190-016-0270

Boom Construction Ltd  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas  
**LOCATION:** South Of Fort MacMurray  
**JOB DESCRIPTION:**

**DATE:** 2019/11/18  
**PO:**  
**JOB NO:** 19190

**ACTIVITIES:** FLHA and tool box inspection of equipment continue bridge support fabrication

## LABOUR

Trade	LOA	REG Hrs	OT Hrs	TT Hrs
Foreman - General	<input type="checkbox"/>	8	4	
Journeyman	<input type="checkbox"/>	8	4	
1st Year Apprentice	<input type="checkbox"/>	8	4	
Welder w/Rig CWB or B-Pressure	<input type="checkbox"/>	12		

## EQUIPMENT

Equipment	Qty	Rate Type
200 Amp Welder	1	Daily
3 Ton Picker/Tool Truck	1	Daily
Pickup - Crew Cab 4WD 1 Ton	1	Daily
H2S Monitor	2	Daily

**Supervisor Signature:**

**Client Signature:**

Jerry Hansen Nov 25/19.



# Daily Field Ticket

19190-016-0271

Boom Construction Ltd  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas  
**LOCATION:** South Of Fort MacMurray  
**JOB DESCRIPTION:**

**DATE:** 2019/11/19  
**PO:**  
**JOB NO:** 19190

**ACTIVITIES:** FLHA toolbox inspections of equipment continue fabricating bridge supports

## LABOUR

Trade	LOA	REG Hrs	OT Hrs	TT Hrs
Foreman - General	<input type="checkbox"/>	8	4	
Journeyman	<input type="checkbox"/>	8	4	
1st Year Apprentice	<input type="checkbox"/>	8	4	
Welder w/Rig CWB or B-Pressure	<input type="checkbox"/>	12		

## EQUIPMENT

Equipment	Qty	Rate Type
200 Amp Welder	1	Daily
3 Ton Picker/Tool Truck	1	Daily
Pickup - Crew Cab 4WD 1 Ton	1	Daily
H2S Monitor	2	Daily

**Supervisor Signature:**

**Client Signature:**

Jerry Hansen Nov 25/19.



# Daily Field Ticket

19190-016-0276

Boom Construction Ltd  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas  
**LOCATION:** South Of Fort MacMurray  
**JOB DESCRIPTION:**

**DATE:** 2019/11/20  
**PO:**  
**JOB NO:** 19190

**ACTIVITIES:** tool box, FLHA inspect trucks and equipment continue on bridge repair work

## LABOUR

Trade	LOA	REG Hrs	OT Hrs	TT Hrs
Foreman - General	<input type="checkbox"/>	8	4	
Journeyman	<input type="checkbox"/>	8	4	
1st Year Apprentice	<input type="checkbox"/>	8	4	
Welder w/Rig CWB or B-Pressure	<input type="checkbox"/>	12		

## EQUIPMENT

Equipment	Qty	Rate Type
200 Amp Welder	1	Daily
3 Ton Picker/Tool Truck	1	Daily
Pickup - Crew Cab 4WD 1 Ton	1	Daily
H2S Monitor	2	Daily

**Supervisor Signature:**

**Client Signature:**

Jerry Hansen Nov 25/19.



# Daily Field Ticket

19190-016-0277

Boom Construction Ltd  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas  
**LOCATION:** South Of Fort MacMurray  
**JOB DESCRIPTION:**

**DATE:** 2019/11/21

**PO:**

**JOB NO:** 19190

**ACTIVITIES:** FLHA and toolbox inspect trucks and equipment continue on bridge repair

## LABOUR

Trade	LOA	REG Hrs	OT Hrs	TT Hrs
Foreman - General	<input type="checkbox"/>	8	4	
Journeyman	<input type="checkbox"/>	8	4	
1st Year Apprentice	<input type="checkbox"/>	8	4	
Welder w/Rig CWB or B-Pressure	<input type="checkbox"/>	12		

## EQUIPMENT

Equipment	Qty	Rate Type
200 Amp Welder	1	Daily
3 Ton Picker/Tool Truck	1	Daily
Pickup - Crew Cab 4WD 1 Ton	1	Daily
H2S Monitor	2	Daily

**Supervisor Signature:**

**Client Signature:**

Jerry Hansen Nov 25/19.



# Daily Field Ticket

19190-016-0278

Boom Construction Ltd  
42A McCool Crescent Crossfield AB  
TOM OSC  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas  
**LOCATION:** South Of Fort MacMurray  
**JOB DESCRIPTION:**

**DATE:** 2019/11/22

**PO:**

**JOB NO:** 19190

**ACTIVITIES:** FLHA and tool box daily inspections of vehicles and equipment continue cutting tacking and welding of bridge supports

## LABOUR

Trade	LOA	REG Hrs	OT Hrs	TT Hrs
Foreman - General	<input type="checkbox"/>		12	
Journeyman	<input type="checkbox"/>		12	
1st Year Apprentice	<input type="checkbox"/>		12	
Welder w/Rig CWB or B-Pressure	<input type="checkbox"/>	12		

## EQUIPMENT

Equipment	Qty	Rate Type
200 Amp Welder	1	Daily
Pickup - Crew Cab 4WD 1 Ton	1	Daily
3 Ton Picker/Tool Truck	1	Daily
H2S Monitor	1	Daily

**Supervisor Signature:**



**Client Signature:**



Jerry Hansen Nov.25/19.

40 hr work week started Sunday & ended Thursday end



# Daily Field Ticket

19190-016-0279

Boom Construction Ltd  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas  
**LOCATION:** South Of Fort MacMurray  
**JOB DESCRIPTION:**

**DATE:** 2019/11/23  
**PO:**  
**JOB NO:** 19190

**ACTIVITIES:** FLHA and toolbox inspection of equipment and trucks complete welding of bridge repair clean up and demob to Crossfield

## LABOUR

Trade	LOA	REG Hrs	OT Hrs	TT Hrs
Foreman - General	<input type="checkbox"/>		3	7
Journeyman	<input type="checkbox"/>			7
1st Year Apprentice	<input type="checkbox"/>			7
Welder w/Rig CWB or B-Pressure	<input type="checkbox"/>			11

## EQUIPMENT

Equipment	Qty	Rate Type
3 Ton Picker/Tool Truck	1	Daily
Pickup - Crew Cab 4WD 1 Ton	1	Daily

## MISC

Description	Qty	Rate Type	Upcharge (%)
extra welding rod	1	Each	10
welding rod	1	Each	10

**Supervisor Signature:**

**Client Signature:**

  
Jerry Hansen Nov 25/19.



Box 1379  
42A McCool Crescent Crossfield AB T0M 0S0

**To:** Greenfire Hangingstone Operating Corporation

# INVOICE

DATE	INVOICE #
April 1, 2020	Invoice #: 1129
JOB NUMBER(S)	
20041	
PO(S)	
201906	

**Due Date:** Fri May 1 2020

**Terms:**

**AFE:**

Description	QTY	Rate	Total
Deposit to Start Work - Milestone 1	1.00	87,339.76	87,339.76
<i>A service charge of 2% per month will be charged on all amounts overdue on regular statement dates.</i>		Subtotal:	\$ 87,339.76
		GST:	\$ 4,366.99

---

Invoice Total: \$ 91,706.75

**GST/HST id#:** 139628697RT0001

*Thank you for your prompt payment!*



Box 1379  
42A McCool Crescent Crossfield AB T0M 0S0

**To:** Green Fire Hangingstone Operating Corporation

# INVOICE

DATE	INVOICE #
April 2, 2020	Invoice #: 1054

JOB NUMBER(S)
20041

PO(S)
201906

**Due Date:** Thu Apr 02 2020

**Terms:**

**AFE:**

Description	QTY	Rate	Total
Fabrication Complete	1.00	87,339.76	87,339.76
PWHT NDE Discount	1.00	-11,500.00	-11,500.00
<i>A service charge of 2% per month will be charged on all amounts overdue on regular statement dates.</i>		Subtotal:	\$ 75,839.76
		GST:	\$ 3,791.99

---

Invoice Total: \$ 79,631.75

**GST/HST id#:** 139628697RT0001

*Thank you for your prompt payment!*





# Milestone Completion Certificate

Project Name	Greenfire MOC 100 Pad 3	Project Value	\$ 291,132.55	Revised Value	\$ 279,632.53
PO#	201906	Payment Cert Date	2020-03-19		
AFE#	NA	Agreement #	NA		

Milestones	Description	PO%	Milestone Value	Progress	Job % Complete	Billable Value
1	Deposit to Start Work	31.2%	\$ 87,339.76	100%	31.2%	\$ -
2	Fabrication Complete	31.2%	\$ 87,339.76	100%	31.2%	\$ 87,339.76
3	Site Install Complete	31.2%	\$ 87,339.76		0.0%	\$ -
4	Final Turnover Documents	10.4%	\$ 29,113.25		0.0%	\$ -
5	COR-001	0.0%			0.0%	\$ -
6	PWHT/NDE Discount	-4.1%	-\$ 11,500.00	100%	-4.1%	-\$ 11,500.00
7		0.0%			0.0%	\$ -
8		0.0%			0.0%	\$ -
9		0.0%			0.0%	\$ -
10		0.0%			0.0%	\$ -
11		0.0%			0.0%	\$ -
12		0.0%			0.0%	\$ -
13		0.0%			0.0%	\$ -
14		0.0%			0.0%	\$ -
15		0.0%			0.0%	\$ -
16		0.0%			0.0%	\$ -
17		0.0%			0.0%	\$ -
18		0.0%			0.0%	\$ -
19		0.0%			0.0%	\$ -
20		0.0%			0.0%	\$ -
21		0.0%			0.0%	\$ -
22		0.0%			0.0%	\$ -
23		0.0%			0.0%	\$ -
24		0.0%			0.0%	\$ -
25		0.0%			0.0%	\$ -
26		0.0%			0.0%	\$ -
27		0.0%			0.0%	\$ -
28		0.0%			0.0%	\$ -
29		0.0%			0.0%	\$ -
30		0.0%			0.0%	\$ -
		0.0%			0.0%	\$ -
		0.0%			0.0%	\$ -
<b>Totals</b>		<b>100.0%</b>	<b>\$ 279,632.53</b>			
Billable Total					58.4%	\$ 75,839.76
Hold Back					0%	\$ -
<b>Payment Cert Total</b>						<b>\$ 75,839.76</b>

Contractor Verification

Name: Brett Hiebert

Signature: 

Client Verification Signature

Name: Travis Shield

Signature: Approved via attached email

## Brett Hiebert

---

**From:** Travis Shield <tshield@greenfireoilandgas.com>  
**Sent:** March 26, 2020 11:17 AM  
**To:** Brett Hiebert  
**Cc:** Natasha Wenckowski; Keisha Carson  
**Subject:** Re: Milestone Certificate #001 Mar 19 2020.pdf

Hi Brett

It looks good. I'll print, sign and scan after I get back to the office from vacation.

Thanks,  
Travis

Sent from my Bell Samsung device over Canada's largest network.

---

**From:** Brett Hiebert <BHiebert@boomltd.ca>  
**Sent:** Thursday, March 19, 2020 4:18:05 PM  
**To:** Travis Shield <tshield@greenfireoilandgas.com>  
**Cc:** Natasha Wenckowski <NWenckowski@boomltd.ca>; Keisha Carson <kcarson@boomltd.ca>  
**Subject:** Milestone Certificate #001 Mar 19 2020.pdf

Good afternoon Travis,

Please see attached Milestone Certificate with the discount applied for PWHT and Remaining NDE. Please sign and return so we can invoice for the completed fabrication.

Regards,



### Brett Hiebert

Project Manager

Office: 403-946-0066

Cell: 403-619-7111

Email: [Bhiebert@boomltd.ca](mailto:Bhiebert@boomltd.ca) | [www.boomltd.ca](http://www.boomltd.ca)

Box 1379, 42A McCool Crescent  
Crossfield Alberta T0M 0S0



Box 1379  
42A McCool Crescent Crossfield AB T0M 0S0

**To:** Green Fire Hangingstone Operating Corporation

# INVOICE

DATE	INVOICE #
March 11, 2020	Invoice #: 1034

JOB NUMBER(S)

PO(S)

**Due Date:** Wed Mar 11 2020

**Terms:**

**A/E:**

Description	QTY	Rate	Total
Loading Arm Fabrication PWHT and Delivery	1.00	8,658.11	8,658.11
<i>A service charge of 2% per month will be charged on all amounts overdue on regular statement dates.</i>		Subtotal:	\$ 8,658.11
		GST:	\$ 432.91

Invoice Total: \$ 9,091.02

**GST/HST id#:** 139628697RT0001

*Thank you for your prompt payment!*



Box 1379  
42A McCool Crescent Crossfield AB T0M 0S0

**To:** Greenfire Hangingstone Operating Corporation

# INVOICE

DATE	INVOICE #
August 12, 2020	Invoice #: 1130

JOB NUMBER(S)
20041

PO(S)
201906

**Due Date:** Fri Sep 11 2020

**Terms:**

**AFE:**

Description	QTY	Rate	Total
Legal Fees Incurred on Account	1.00	2,317.36	2,317.36
<i>A service charge of 2% per month will be charged on all amounts overdue on regular statement dates.</i>		Subtotal:	\$ 2,317.36
		GST:	\$ 115.87

Invoice Total: \$ 2,433.23

**GST/HST id#:** 139628697RT0001

*Thank you for your prompt payment!*





Box 1379  
42A McCool Cres  
Crossfield, AB T0M 0S0

## Invoice

Invoice#: 20180582

Date: 10/08/2019

**Billed To:** Greenfire Hangingstone Operating Corporation  
1650, 444 - 5 Avenue SW  
Calgary AB T2P 2T8

**Project:** Greenfire Hangingstone  
1650, 444 - 5 Avenue SW  
Calgary AB T2P 2T8

**Due Date:** 10/08/2019

**Terms:**

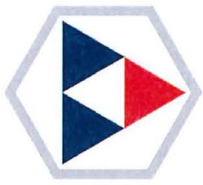
**Order#** 201357

Description	Unit	Quantity	Price	Amount
As per attached Spreadsheet		1.0000	40,839.300000	40,839.30

A service charge of 10% per month will be charged on all amounts overdue

Total:	40,839.30	Holdback:	0.00	Invoice Amount:	40,839.30
		GST Taxable:	40,839.30	GST:	2,041.97
		PST Taxable:	0.00	PST:	0.00
				Invoice Total:	42,881.27
				<b>Amount Due</b>	<b>42,881.27</b>
GST/HST Id#: 139628697RT0001					

*Thank you for your prompt payment!*



**BOOM**  
CONSTRUCTION

Field Ticket No.	Job No.	Field Ticket Date	Total Billable (\$)
19119-016-0119	19119	8/13/2019	\$11,839.40
19119-016-0120	19119	8/14/2019	\$1,739.07
19119-016-0124	19119	8/15/2019	\$408.75
19119-016-0126	19119	8/16/2019	\$545.00
19119-016-0132	19119	8/19/2019	\$1,059.02
19119-016-0148	19119	8/27/2019	\$1,147.30
19119-016-0157	19119	8/29/2019	\$449.00
19119-016-0173	19119	9/5/2019	\$7,275.44
19119-016-0176	19119	9/6/2019	\$5,206.72
19119-016-0178	19119	9/7/2019	\$5,653.80
19119-016-0179	19119	9/8/2019	\$5,515.80
		Total	\$40,839.30



# Daily Field Ticket

19119-016-0119

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**LOCATION:**

**JOB DESCRIPTION:** Greenfire Hanging Stone

**DATE:** 2019/8/13

**PO:** 201357

**JOB NO:** 19119

**ACTIVITIES:** receive material cut, tack and weld spools start QC binder weld mapping

## LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Kyle Scott	Foreman - General	<input type="checkbox"/>	9	\$75.05		\$112.58			\$675.45
Jeff Smith	Welder w/Rig CWB or B-Pressure	<input type="checkbox"/>	9	\$124.65					\$1,121.85
Lane Sahli	1st Year Apprentice	<input type="checkbox"/>	9	\$42.88		\$64.32			\$385.92
William McGrath	QA/QC Manager	<input type="checkbox"/>	4	\$82.18					\$328.72

**Subtotal Labour:** **\$2,511.94**

## THIRD PARTY

Description	Qty	Rate Type	Rate	Upcharge (%)	Rate (marked-up)	Total
XCEED Oilfield Supply Ltd	1	Each	\$8,224.22	10%	\$9,046.64	\$9,046.64
Xceed Oilfield Inv# 112152 Supplies	1	Each	\$255.29	10%	\$280.82	\$280.82

**Subtotal Third Party:** **\$9,327.46**

Total Labour: \$2,511.94  
Total Third Party: \$9,327.46  
Subtotal: \$11,839.40

**Total: \$11,839.40**

**Supervisor Signature:**

*Kyle Scott*

**Client Signature:**



Hany Mhanney

Digitally signed by Hany Mhanney  
DN: C=CA,  
E=hany.mhanney@greenfireoilandgas.com,  
O=Greenfire Oil and Gas, OU=Engineering,  
CN=Hany Mhanney  
Reason: I am approving this document  
Date: 2019.09.08 12:03:56-06'00'



# Daily Field Ticket

19119-016-0119

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca



104 - 6439 - 67 STREET  
RED DEER, ALBERTA T4P 1A3  
Phone: 403-356-0044  
Fax: 403-356-0174



## INVOICE 112089

09-Aug-2019 10:22 am

Page 1 of 2

P.O. #

Buyer:

Created by:

Invoiced by: Mike Argent

Email: accounting@xceedoilfieldsupply.com

Sold to: BOOCON  
BOOM CONSTRUCTION LTD.  
PO BOX 1379, MCCOOL CRESCENT

CROSSFIELD, AB T0M 0S0

Ship to:  
BOOM CONSTRUCTION  
ATTN: KYLE  
JOB#19119

PO# 19119001

Item	Description	Ordered	Shipped	Unit \$	Extended \$
PIP- 6080	6" S/80 SMLS SA106B/CSA GR. 290 CAT 1 SRL BE HT#1514276V, A8239	41.00	41.00	32.94	1,350.54
* FLA- 60300XRWN	6" 300# XH RFWN FLANGE A105N HT#14/35818	12.00	12.00	70.37	844.44
* WEL- 60X90	6" XH LR 90 ELBOW A234-WPB HT#0153	8.00	8.00	59.74	477.92
* DHV- 60C120F6	6" 300 RF DHV C120F6 GATE VLV WCB NACE TRIM 12	3.00	3.00	1,440.94	4,322.82
* GAS- 60300CGI	6" 300# SWI GASKET 316IR-316-FG, ASME B16.20	10.00	10.00	10.90	109.00
* STU- 0747M	3/4" X 4-3/4" B7M STUDS	120.00	120.00	1.31	157.20
* NUT- 07M	3/4" 2HM NUTS	240.00	240.00	0.46	110.40
PIP- 2080	2" S/80 SMLS SA106B/CSA GR. 290 CAT 1 SRL BE HT#171905011	63.00	63.00	6.01	378.63
PIP- 1080	1" S/80 SMLS A/SA108B/ CSA GR. 290 CAT1 SRL PE HT#5519408	21.00	21.00	3.27	68.67
* SWA- 2010XPB	2" X 1" S/80 SWAGE NIPPLE PSE/BLE A234-WPB HT#H05725	2.00	2.00	24.36	48.72
* WEL- 20X90	2" XH LR 90 ELBOW A234-WPB HT#943D	6.00	6.00	5.17	31.02
* FOR- 15103MRT	1-1/2" X 1" 3000# FS SW TEE A105N HT#CA0863	1.00	1.00	15.08	15.08
* FOR- 103MSW90	1" 3000# SW 90DEG ELBOW A105N HT#85Z	3.00	3.00	4.09	12.27
* FOR- 103MSWU	1" 3000# SW RR UNION A105N HT#62U	1.00	1.00	6.17	6.17
* DHV- 10F1800S33	1" 800 DHV F1800S33 SW GATE VLV A105 NACE TRIM 8	1.00	1.00	98.20	98.20
* PIC- WT100X9.5X300	WELD ON PIPE SHOE WT100x9.5x300 C/W INSUL BANDING SLOT	2.00	2.00	44.71	89.42

Please refer to our terms &  
conditions on our website.  
www.Xceedoilfieldsupply.com  
"We appreciate your business"

NET 30

Approved by:

GST # 81957277RT001





# Daily Field Ticket

19119-016-0119

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca



104 - 6439 - 67 STREET  
RED DEER, ALBERTA T4P 1A3  
Phone: 403-356-0044  
Fax: 403-356-0174



## INVOICE 112089

09-Aug-2019 10:22 am

Page 2 of 2

P.O. #

Buyer:

Created by:

Invoiced by: Mike Argent

Email: accounting@xceedoilfieldsupply.com

Sold to: BOOCON  
BOOM CONSTRUCTION LTD.  
PO BOX 1379, MCCOOL CRESCENT  
CROSSFIELD, AB T0M 0S0

Ship to:  
BOOM CONSTRUCTION  
ATTN: KYLE  
JOB#19119

Item	Description	Ordered	Shipped	Unit \$	Extended \$
* PIC- WT100X13.5X300	WELD ON PIPE SHOE WT100x13.5x300 C/W INSUL BANDING SLOT	2.00	2.00	51.86	103.72
ABOVE ITEMS ON TICKET 112089-001 PRINTED ON 08-Aug-2019 @ 07:15:13 AM					
	Goods & Services Tax	1.00	1.00	411.21	411.21

Stocked Items	Cores	Enviro Charges	Misc Charges	Other Charges	GST	Payments	Document Total
8,224.22	0.00	0.00	0.00	0.00	411.21	0.00	8,635.43

Please refer to our terms &  
conditions on our website.  
www.Xceedoilfieldsupply.com  
"We appreciate your business"

NET 30

Approved by:

GST # 819572777RT001



# Daily Field Ticket

19119-016-0119

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca



104 - 6439 - 67 STREET  
RED DEER, ALBERTA T4P 1A3  
Phone: 403-356-0044  
Fax: 403-356-0174



## INVOICE 112152

12-Aug-2019 2:18 pm  
Page 1 of 1  
P.O. # 19119001  
Buyer:

Created by:  
Invoiced by: Mike Argent

Email: [accounting@xceedoilfieldsupply.com](mailto:accounting@xceedoilfieldsupply.com)

Sold to: BOOCON  
BOOM CONSTRUCTION LTD.  
PO BOX 1379, MCCOOL CRESCENT

Ship to:  
O/B: KYLE  
JOB#19119

CROSSFIELD, AB T0M 0S0

Item	Description	Ordered	Shipped	Unit \$	Extended \$
WEL- 60XT	6" XH TEE A234-WPB HT#61A10099, 5860	2.00	2.00	92.29	184.58
PIP- 1080	1" S/80 SMLS A/SA106B/ CSA GR. 290 CAT1 SRL PE HT#5519408	21.00	21.00	2.89	60.69
FSF- 103MSW90	1" 3000# SW 90DEG A105N HT#85Z	2.00	2.00	5.01	10.02
	Goods & Services Tax	1.00	1.00	12.76	12.76

Stocked Items	Cores	Enviro Charges	Misc Charges	Other Charges	GST	Payments	Document Total
255.29	0.00	0.00	0.00	0.00	12.76	0.00	268.05

Please refer to our terms &  
conditions on our website.  
[www.Xceedoilfieldsupply.com](http://www.Xceedoilfieldsupply.com)  
"We appreciate your business"

NET 30

Approved by:

GST # 819572777RT001



# Daily Field Ticket

19119-016-0120

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**LOCATION:**

**JOB DESCRIPTION:** Greenfire Hanging Stone

**DATE:** 2019/8/14

**PO:** 201357

**JOB NO:** 19119

**ACTIVITIES:** continue fabrication of spools leaven 6 field welds with randoms load onto trailer prep NDE REQUESTS finish weld mapping visual inspections on shop welds

## LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Kyle Scott	Foreman - General	<input type="checkbox"/>	6	\$75.05					\$450.30
Jeff Smith	Welder w/Rig CWB or B-Pressure	<input type="checkbox"/>	5	\$124.65					\$623.25
Lane Sahli	1st Year Apprentice	<input type="checkbox"/>	5	\$42.88					\$214.40
William McGrath	QA/QC Manager	<input type="checkbox"/>	4	\$82.18					\$328.72

**Subtotal Labour:** **\$1,616.67**

## EQUIPMENT

Equipment	Qty	Rate Type	Rate	Total
Pickup & Trailer	2	Hourly	\$61.20	\$122.40

**Subtotal Equipment:** **\$122.40**

Total Labour: \$1,616.67  
Total Equipment: \$122.40  
Subtotal: \$1,739.07

**Total: \$1,739.07**

**Supervisor Signature:**

**Client Signature:**



Hany Mhanney

Digitally signed by Hany Mhanney  
DN: C=CA,  
E=hany.mhanney@greenfireoilandgas.com,  
O=Greenfire Oil and Gas, OU=Engineering,  
CN=Hany Mhanney  
Reason: I am approving this document  
Date: 2019.09.07 07:50:25-08'00'



## Daily Field Ticket

19119-016-0124

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
TOM OSO  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**LOCATION:**

**JOB DESCRIPTION:** Greenfire Hanging Stone

**DATE:** 2019/8/15

**PO:** 201357

**JOB NO:** 19119

**ACTIVITIES:** pick up spools from NDE and take them to PWHT in Calgary off load in Calgary

### LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Kyle Scott	Foreman - General	<input type="checkbox"/>	3	\$75.05					\$225.15

**Subtotal Labour:** **\$225.15**

### EQUIPMENT

Equipment	Qty	Rate Type	Rate	Total
Pickup & Trailer	3	Hourly	\$61.20	\$183.60

**Subtotal Equipment:** **\$183.60**

Total Labour: \$225.15

Total Equipment: \$183.60

Subtotal: \$408.75

**Total: \$408.75**

**Supervisor Signature:**

**Client Signature:**



Hany Mhanney

Digitally signed by Hany Mhanney  
DN: cn=Hany Mhanney, o=Greenfire Oil and Gas, ou=Engineering, cn=Hany Mhanney  
Reason: I am approving this document  
Date: 2019.09.07 07:49:44 -06'00'





# Daily Field Ticket

19119-016-0126

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
TOM OSO  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**LOCATION:**

**JOB DESCRIPTION:** Greenfire Hanging Stone

**DATE:** 2019/8/16

**PO:** 201357

**JOB NO:** 19119

**ACTIVITIES:** pick up spools from pwht take spools to X-ray

## LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Kyle Scott	Foreman - General	<input type="checkbox"/>	4	\$75.05					\$300.20

**Subtotal Labour:** **\$300.20**

## EQUIPMENT

Equipment	Qty	Rate Type	Rate	Total
Pickup & Trailer	4	Hourly	\$61.20	\$244.80

**Subtotal Equipment:** **\$244.80**

Total Labour: \$300.20

Total Equipment: \$244.80

Subtotal: \$545.00

**Total: \$545.00**

**Supervisor Signature:**

**Client Signature:**



Hany Mhanney

Digitally signed by Hany Mhanney  
DN: cn=Hany Mhanney, email=Hany.Mhanney@greenfireoilandgas.com,  
ou=Greenfire Oil and Gas, ou=Engineering,  
cn=Hany Mhanney  
Reason: I am approving this document  
Date: 2019.09.07 07:49:11-08'00'



# Daily Field Ticket

19119-016-0132

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**LOCATION:**

**JOB DESCRIPTION:** Greenfire Hanging Stone

**DATE:** 2019/8/19

**PO:** 201357

**JOB NO:** 19119

**ACTIVITIES:** bolt up spools hydro and clean up pick up steel for on site

## LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Kyle Scott	Foreman - General	<input type="checkbox"/>	6	\$75.05					\$450.30
Khari Leeming	Labourer - General	<input type="checkbox"/>	2	\$38.57					\$77.14
Zac Dunhame	3rd Year Apprentice	<input type="checkbox"/>	2	\$55.14					\$110.28

**Subtotal Labour:** **\$637.72**

## THIRD PARTY

Description	Qty	Rate Type	Rate	Upcharge (%)	Rate (marked-up)	Total
Arkton Inv# 03339 Beam	1	Each	\$383.00	10%	\$421.30	\$421.30

**Subtotal Third Party:** **\$421.30**

Total Labour: \$637.72  
Total Third Party: \$421.30  
Subtotal: \$1,059.02

**Total:** **\$1,059.02**

**Supervisor Signature:**

**Client Signature:**



Hany Mhanney

Digitally signed by Hany Mhanney  
DN: C=CA,  
E=hany@greenfireoilandgas.com,  
O=Greenfire Oil and Gas,  
OU=Engineering, CN=Hany Mhanney  
Reason: I am approving this document  
Date: 2019.09.07 07:47:55-06'00'



## Daily Field Ticket

19119-016-0132

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca

### ArkTon Steel Inc.

Box 1380, 50 McCool Cr., Crossfield, AB T0M 0S0  
Tel: 403-946-5601 Fax: 403-946-5790  
GST# 85383 9728 RT0001

### ARKTON STEEL

Rick Hoogenboom  
Boom Construction Ltd.  
PO Box 1379  
Crossfield Ab  
T0M 0S0 Canada

Invoice No: INV-03339  
Date: Aug 14, 2019  
SO no: SO-01007  
PO no: 19119-002  
Terms: 30 days  
Bill of Lading No: BoL-03871

### Invoice

#### Supply Material Only

Code	Description	Job #	Price	Qty	Sub Total	GST %	GST	Total CAD
WF3000550	(W6" x 15 x 20') A992/A572-50 Beam		383.00	1	383.00	5%	19.15	402.15
Totals CAD					383.00		19.15	402.15

Thank You for Your Business!  
GST# 85383 9728RT0001

Net 30 from Invoice Date: 2% per month on all invoices over 30 days.  
(24% per annum on overdue accounts, non-negotiable)



# Daily Field Ticket

19119-016-0148

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
TOM OSO  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas  
**LOCATION:**  
**JOB DESCRIPTION:** Greenfire Hanging Stone

**DATE:** 2019/8/27  
**PO:** 201357  
**JOB NO:** 19119

**ACTIVITIES:** receive material cut and tack fabricate landing and stairs

## LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Jeff Smith	Welder w/Rig CWB or B-Pressure	<input type="checkbox"/>	8	\$124.65		\$88.07			\$997.20
Kyle Scott	Foreman - General	<input type="checkbox"/>	2	\$75.05					\$150.10

**Subtotal Labour:** **\$1,147.30**

Total Labour: \$1,147.30

Subtotal: \$1,147.30

**Total: \$1,147.30**

**Supervisor Signature:**

**Client Signature:**



Hany Mhanney

Digitally signed by Hany Mhanney  
DN: C=CA,  
E=hany.mhanney@greenfireoilandgas.com,  
O=Greenfire Oil and Gas, OU=Engineering,  
CN=Hany Mhanney  
Reason: I am approving this document  
Date: 2019.09.07 07:46:53-06'00'





# Daily Field Ticket

19119-016-0157

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**LOCATION:**

**JOB DESCRIPTION:** Greenfire Hanging Stone

**DATE:** 2019/8/29

**PO:** 201357

**JOB NO:** 19119

**ACTIVITIES:** finish off landing and stairs

## LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Jeff Smith	Welder w/Rig CWB or B-Pressure	<input type="checkbox"/>	3	\$124.65					\$373.95
Kyle Scott	Foreman - General	<input type="checkbox"/>	1	\$75.05					\$75.05

**Subtotal Labour:** **\$449.00**

Total Labour: \$449.00

Subtotal: \$449.00

**Total: \$449.00**

**Supervisor Signature:**

**Client Signature:**



Hany Mhanney

Digitally signed by Hany Mhanney  
DN: C=CA,  
E=hany.mhanney@greenfireoilandgas.com,  
O=Greenfire Oil and Gas,  
OU=Engineering, CN=Hany Mhanney  
Reason: I am approving this document  
Date: 2019.09.08 12:04:43-06'00'



# Daily Field Ticket

19119-016-0173

Boom Construction Ltd.  
42A McCool Crescent Crossfield  
AB T0M 0S0  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**DATE:** 2019/9/5

**LOCATION:**

**PO:** 201357

**JOB DESCRIPTION:** Greenfire Hanging Stone

**JOB NO:** 19119

**ACTIVITIES:** travel to site from Crossfield AB orientations on site permit from green fire cut and cap piles cut and weld gussets clean up

## LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Kyle Scott	Foreman - General	<input type="checkbox"/>	8	\$75.05			7	\$75.05	\$1,125.75
Zac Dunhame	3rd Year Apprentice	<input type="checkbox"/>	6	\$55.14			7	\$55.14	\$716.82
Jon Heartley	Welder w/Rig CWB or B-Pressure	<input type="checkbox"/>	6	\$124.65			7	\$124.65	\$1,620.45
Dirk Lundy	3rd Year Apprentice	<input type="checkbox"/>	6	\$55.14			7	\$55.14	\$716.82

**Subtotal Labour:** **\$4,179.84**

## EQUIPMENT

Equipment	Qty	Rate Type	Rate	Total
Pickup & Trailer	1	Daily	\$550.80	\$550.80
Pickup - Crew Cab 4WD 1 Ton	1	Daily	\$270.00	\$270.00

**Subtotal Equipment:** **\$820.80**

## THIRD PARTY

Description	Qty	Rate Type	Rate	Upcharge (%)	Rate (marked-up)	Total
Continental Stress INV#119-4781	1	Each	\$500.00	10%	\$550.00	\$550.00
Stanley Technical Services Ltd INV#94037351	1	Each	\$1,568.00	10%	\$1,724.80	\$1,724.80

**Subtotal Third Party:** **\$2,274.80**

Total Labour: \$4,179.84  
Total Equipment: \$820.80  
Total Third Party: \$2,274.80  
Subtotal: \$7,275.44

**Total:** **\$7,275.44**

**Supervisor Signature:**

**Client Signature:**

Hany Mhanney

Digitally signed by Hany Mhanney  
DN: C=CA, E=hany@greenfireoilandgas.com,  
O=Greenfire Oil and Gas, OU=Engineering,  
CN=Hany Mhanney  
Reason: I am approving this document  
Date: 2019.09.05 12:07:36-06'00'



## Daily Field Ticket

19119-016-0173

Boom Construction Ltd.  
42A McCool Crescent Crossfield  
AB T0M 0S0  
403.946.0066  
www.boomltd.ca



### Invoice

7216 - 52 Street  
Edmonton, AB T6B 2G3  
Telephone: (780) 468-4973  
Fax: (780) 466 - 7906  
E-Mail: edmonton@continentalstress.com  
Toll Free: 1-888-437-1222

BOOM CONSTRUCTION LTD.  
BOX 1379  
CROSSFIELD, AB T0M 0S0

G.S.T. # 101130672RT0001

Terms: NET 30 DAYS:  
2% per month charged on all  
overdue accounts.

ATTENTION: ACCOUNTS PAYABLE  
ORDERED BY: KYLE SCOTT

Invoice Date	Invoice Number	Purchase Order #	Job Number	Vendor / Supplier #
Aug 21, 2019	I19-4781	19119-004	19119	

FOR STRESS RELIEVING IN OUR CALGARY FURNACE

CALGARY JOB NO. CF19-6765  
SPOOLS (8)  
SHARED LOAD

FURNACE CHARGE @ \$ 500.00 \$ 500.00

Subtotal before taxes	\$	500.00
Total GST	\$	25.00
Amount Due		\$525.00



# Daily Field Ticket

19 119-016-0173

Boom Construction Ltd.  
42A McCool Crescent Crossfield  
AB T0M 0S0  
403.946.0066  
www.boomltd.ca



## Stanley Technical Services Ltd

4504 Imperial Road,  
Olds, AB T4H 1M6, Canada.

Phone: 403-556-3022 Fax: 403-507-2287 Email: StanleyInspectionAR@sbdinc.com

Page 1 of 1

## Invoice

### Bill-To-Party

Boom Construction Ltd.  
42A McCool Crescent  
PO Box 1379  
CROSSFIELD AB T0M 0S0  
CANADA

### Ship-To-Party

Boom Construction Ltd.  
42A McCool Crescent  
PO Box 1379  
CROSSFIELD AB T0M 0S0  
CANADA

### Information

Invoice No. 94037351  
Invoice Date 09/04/2019  
Sales Order 70031570  
Purchase Order 19-119-003  
Customer No. 14571  
Currency CAD  
Term of Payment Invoice date plus 30 days  
Incoterm EXW plant  
WBS Number I-0254

Item	Material/Description	Quantity	Unit Price	Value
	BOOM CONSTRUCTION PO# 19-119-003 JOB# 19-119 =====			
	WEEK - 8/11/2019 - 8/17/2019			
10	2 MAN RT 163660 HOURLY RATE (MONDAY - FRIDAY, PER HOUR)	8 EA	160.00	1,280.00
20	WELD CHARGES FOR 2 MAN RT 163660 6" UP TO SCH 80	32 EA	9.00	288.00
Total Before Tax				1,568.00
(GST 5%)				78.40
Total Tax				78.40
Total Amount (CAD)				1,646.40
BY WIRE TRANSFER:				
Bank: RBC Royal Bank - Main Branch				
Address: 200 Bay St-Main Flr, Toronto, Ontario - M5J 2J5				
Name: Stanley Technical Services Ltd				
Transit Number: 00002 FI (Bank ID): 003				
Account#: 1553833 SWIFT Code: ROYCCAT2				
BY CHECK:				
Stanley Technical Services Ltd				
C/O C05993C				
PO BOX 482, STN M				
CALGARY, AB T2P 5J7				
CANADA				



# Daily Field Ticket

19119-016-0173



Customer:	Boom Construction	# of Crew:	2	Man RT/MT/PT/UTT Unit	Assistant:		SPI Job #:	I-0254-01
SAP #:	14571	Lead Tech (Lev 2)	Monte Todd		Assistant:		Location:	Olds, Alb
PO #:	19-119-003	Assistant:	Bryce Schram				Rig No.:	
Job #:	19-119	Assistant:						

Date	Day of Week	Crew Time					Film Charges										Equip & Consumables			
		Hourly (Mon-Fri 8 hrs)	O/T Hrs (excess of 8 hrs)	Sat, Sun, Holiday Hrs	Per Diem	Miles	1/2" - 3" Up to Sch 80	1/2"-3" Over Sch 80	4" Up to Sch 80	4" Over Sch 80	6" Up to Sch 80	6" Over Sch 80	8" Up to Sch 80	8" Over Sch 80	16" Up to Sch 80	14" x 17" Film	RT Tube (per DAY)	Radiation Source (per DAY)	MT / PT per can / lb.	UT Coup Low Ter
11-Aug	Sunday																			
12-Aug	Monday																			
13-Aug	Tuesday																			
14-Aug	Wednesday	4									16									
15-Aug	Thursday																			
16-Aug	Friday	4									16									
17-Aug	Saturday																			
		8.00	-	-	-	-	-	-	-	-	32.00	-	-	-	-	-	-	-	-	-
Rate		160.00	205.00	229.00	#####	1.10	6.50	7.50	7.50	8.50	9.00	10.00	12.00	14.00	17.60	28.00	80.00	10.00	29.00	25.00
Total		1,280.00	-	-	-	-	-	-	-	-	288.00	-	-	-	-	-	-	-	-	-
Total Hrs		16																		

\$ 1,568.00

Notes:

# Daily Field Ticket

19119-016-0173



4504 Imperial Road  
Olds, Alberta T4H 1M6  
Phone: 403-556-3022

Client Name Boom Construction  
Client Costing  
PO: 19-119-003  
AFE:  
Project: 19-119

STS LEM Number: I-0204-KL-0001  
STS Inspection Reports: I-0204-KL-0001  
Location: STS Old, AB Shop  
STS Unit: DR 07  
Date: Aug. 14, 2019

Description	Quantity	Unit	Unit Rate	Am
2 Man Gamma (Minimum Call Out)	4.00	hour	\$ 160.00	\$
				\$
				\$
				\$
				\$
6" Welds	16.00	weld	\$ 9.00	\$
				\$
				\$
				\$
				\$
				\$

Subtotal: \$

GST: \$

Total: \$

Crew

Technician: K. Lonsdale  
Assistant: T. Hayman

K. Lonsdale

Approvers Name: Kyle Scott  
Approver Title: Sup  
Approver Contact: 403 504 9720



4504 Imperial Road  
Olds, Alberta T4H 1M6  
Phone: 403-556-3022

Client Name	Boom Construction
<u>Client Costing</u>	
PO:	19-119-003
AFE:	
Project:	19-119

STS LEM Number: I-0204-WB-0001  
STS Inspection Reports: I-0204-WB-0001  
Location: STS Old, AB Shop  
STS Unit: DR-04  
Date: Friday, August 16, 2019

[illegible]Crew

Technician: W. Boyd  
Assistant: B. Shram

Approvers Name: Kyle Scott  
Approver Title: Sup  
Approver Contact: 403 304 9220





# Daily Field Ticket

19119-016-0176

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**LOCATION:**

**JOB DESCRIPTION:** Greenfire Hanging Stone

**DATE:** 2019/9/6

**PO:** 201357

**JOB NO:** 19119

**ACTIVITIES:** permit from green fire at 6 am toolbox, FLHA and inspections finish welding gussets on pile cap assist crane set up set building on coordinates with crane dimension 6" emulsion line for welder to finish fabrication order material for fuel gas line and quench water line zac drove to Edmonton and back to pick and deliver material for 1" lines clean up

## LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Kyle Scott	Foreman - General	<input type="checkbox"/>	8	\$75.05	4	\$112.58			\$1,050.72
Zac Dunhame	3rd Year Apprentice	<input type="checkbox"/>	8	\$55.14			8	\$55.14	\$882.24
Dirk Lundy	3rd Year Apprentice	<input type="checkbox"/>	8	\$55.14	4	\$82.71			\$771.96
Jon Heartley	Welder w/Rig CWB or B-Pressure	<input type="checkbox"/>	12	\$124.65					\$1,495.80

**Subtotal Labour:** **\$4,200.72**

## EQUIPMENT

Equipment	Qty	Rate Type	Rate	Total
3 Ton Picker/Tool Truck	16	Hourly	\$46.00	\$736.00
Pickup - Crew Cab 4WD 1 Ton	1	Daily	\$270.00	\$270.00

**Subtotal Equipment:** **\$1,006.00**

Total Labour: \$4,200.72

Total Equipment: \$1,006.00

Subtotal: \$5,206.72

**Total: \$5,206.72**

**Supervisor Signature:**

**Client Signature:**



Hany Mhanney

Digitally signed by Hany Mhanney  
DN: cn=CA, email=hany@greenfireoilandgas.com,  
o=Greenfire Oil and Gas, ou=Engineering,  
cn=Hany Mhanney  
Reason: I am approving this document  
Date: 2019.09.06 12:08:29 -06'00'



# Daily Field Ticket

19119-016-0178

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**LOCATION:**

**JOB DESCRIPTION:** Greenfire Hanging Stone

**DATE:** 2019/9/7

**PO:** 201357

**JOB NO:** 19119

**ACTIVITIES:** permit from green fire operations FLHA toolbox and inspections 6" spools completed fabrication start and finish 1" fuel gas line prep for x ray and hydro of 6" line clean up area

## LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Kyle Scott	Foreman - General	<input type="checkbox"/>			12	\$112.58			\$1,350.96
Jon Heartley	Welder w/Rig CWB or B-Pressure	<input type="checkbox"/>	12	\$124.65					\$1,495.80
Zac Dunhame	3rd Year Apprentice	<input type="checkbox"/>			12	\$82.71			\$992.52
Dirk Lundy	3rd Year Apprentice	<input type="checkbox"/>			12	\$82.71			\$992.52

**Subtotal Labour:** **\$4,831.80**

## EQUIPMENT

Equipment	Qty	Rate Type	Rate	Total
3 Ton Picker/Tool Truck	12	Hourly	\$46.00	\$552.00
Pickup - Crew Cab 4WD 1 Ton	1	Daily	\$270.00	\$270.00

**Subtotal Equipment:** **\$822.00**

Total Labour: \$4,831.80

Total Equipment: \$822.00

Subtotal: \$5,653.80

**Total: \$5,653.80**

**Supervisor Signature:**



**Client Signature:**



Hany Mhanney

Digitally signed by Hany Mhanney  
DN: C=CA,  
E=hany@greenfireoilandgas.com,  
O=Greenfire Oil and Gas,  
OU=Engineering, CN=Hany Mhanney  
Reason: I am approving this document  
Date: 2019.09.09 11:04:18-06'00'



# Daily Field Ticket

19119-016-0179

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
TOM OSO  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**LOCATION:**

**JOB DESCRIPTION:** Greenfire Hanging Stone

**DATE:** 2019/9/8

**PO:** 201357

**JOB NO:** 19119

**ACTIVITIES:** permit from green fire operations FLHA tool box and inspections weld out structural beam prep for hydro continue fab on quench water line weld for electricians on site clean up area

## LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Kyle Scott	Foreman - General	<input type="checkbox"/>			12	\$112.58			\$1,350.96
Jon Heartley	Welder w/Rig CWB or B-Pressure	<input type="checkbox"/>	12	\$124.65					\$1,495.80
Dirk Lundy	3rd Year Apprentice	<input type="checkbox"/>			12	\$82.71			\$992.52
Zac Dunhame	3rd Year Apprentice	<input type="checkbox"/>			12	\$82.71			\$992.52

**Subtotal Labour:** **\$4,831.80**

## EQUIPMENT

Equipment	Qty	Rate Type	Rate	Total
3 Ton Picker/Tool Truck	1	Daily	\$414.00	\$414.00
Pickup - Crew Cab 4WD 1 Ton	1	Daily	\$270.00	\$270.00

**Subtotal Equipment:** **\$684.00**

Total Labour: \$4,831.80

Total Equipment: \$684.00

Subtotal: \$5,515.80

**Total: \$5,515.80**

**Supervisor Signature:**

**Client Signature:**



Hany Mhanney

Digitally signed by Hany Mhanney  
DN: C=CA,  
E=hany@greenfireoilandgas.com,  
O=Greenfire Oil and Gas, OU=Engineering,  
CN=Hany Mhanney  
Reason: I am approving this document  
Date: 2019.09.09 11:03:39-06'00'



Box 1379  
42A McCool Cres  
Crossfield, AB T0M 0S0

## Invoice

Invoice#: 20180583

Date: 10/08/2019

**Billed To:** Greenfire Hangingstone Operating Corporation  
1650, 444 - 5 Avenue SW  
Calgary AB T2P 2T8

**Project:** Greenfire Hangingstone  
1650, 444 - 5 Avenue SW  
Calgary AB T2P 2T8

**Due Date:** 10/08/2019

**Terms:**

**Order#** 201357

Description	Unit	Quantity	Price	Amount
As per attached spreadsheet		1.0000	40,536.550000	40,536.55
A service charge amount of 10% per month will be charges on all amounts overdue				

Total:	40,536.55	Holdback:	0.00	Invoice Amount:	40,536.55
		GST Taxable:	40,536.55	GST:	2,026.83
		PST Taxable:	0.00	PST:	0.00
				Invoice Total:	42,563.38
				<b>Amount Due</b>	<b>42,563.38</b>
GST/HST Id#: 139628697RT0001					

*Thank you for your prompt payment!*



Field Ticket No.	Job No.	Field Ticket Date	Total Billable (\$)
19119-016-0180	19119	9/9/2019	\$4,999.60
19119-016-0181	19119	9/10/2019	\$6,385.04
19119-016-0182	19119	9/11/2019	\$3,416.76
19119-016-0197	19119	9/20/2019	\$25,735.15
		Total	\$40,536.55





## Daily Field Ticket

19119-016-0180

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**LOCATION:**

**JOB DESCRIPTION:** Greenfire Hanging Stone

**DATE:** 2019/9/9

**PO:** 201357

**JOB NO:** 19119

**ACTIVITIES:** permit from green fire ops FLHA tool box inspections complete QW line fabrication complete hydro on quench water line weld down building pwht emulsions line weld for electricians clean up

### LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Kyle Scott	Foreman - General	<input type="checkbox"/>	8	\$75.05	6	\$112.58			\$1,275.88
Zac Dunhame	3rd Year Apprentice	<input type="checkbox"/>	8	\$55.14	4	\$82.71			\$771.96
Dirk Lundy	3rd Year Apprentice	<input type="checkbox"/>	8	\$55.14	4	\$82.71			\$771.96
Jon Heartley	Welder w/Rig CWB or B-Pressure	<input type="checkbox"/>	12	\$124.65					\$1,495.80

**Subtotal Labour:** **\$4,315.60**

### EQUIPMENT

Equipment	Qty	Rate Type	Rate	Total
Pickup - Crew Cab 4WD 1 Ton	1	Daily	\$270.00	\$270.00
3 Ton Picker/Tool Truck	1	Daily	\$414.00	\$414.00

**Subtotal Equipment:** **\$684.00**

Total Labour: \$4,315.60  
Total Equipment: \$684.00  
Subtotal: \$4,999.60

**Total: \$4,999.60**

**Supervisor Signature:**

**Client Signature:**





## Daily Field Ticket

19119-016-0181

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
TOM 0S0  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**DATE:** 2019/9/10

**LOCATION:**

**PO:** 201357

**JOB DESCRIPTION:** Greenfire Hanging Stone

**JOB NO:** 19119

**ACTIVITIES:** permit from green fire operations clean up area until operations was ready to hand us the line cold cut 6" and bake out weld out 6" flanges NDE and pwht and NDE again bolt up spools and torque out flanges load trailer and hook onto truck

### LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Kyle Scott	Foreman - General	<input type="checkbox"/>	8	\$75.05	8	\$112.58			\$1,501.04
Dirk Lundy	3rd Year Apprentice	<input type="checkbox"/>	8	\$55.14	8	\$82.71			\$1,102.80
Zac Dunhame	3rd Year Apprentice	<input type="checkbox"/>	8	\$55.14	8	\$82.71			\$1,102.80
Jon Heartley	Welder w/Rig CWB or B-Pressure	<input type="checkbox"/>	16	\$124.65					\$1,994.40

**Subtotal Labour:** **\$5,701.04**

### EQUIPMENT

Equipment	Qty	Rate Type	Rate	Total
3 Ton Picker/Tool Truck	1	Daily	\$414.00	\$414.00
Pickup - Crew Cab 4WD 1 Ton	1	Daily	\$270.00	\$270.00

**Subtotal Equipment:** **\$684.00**

Total Labour: \$5,701.04  
Total Equipment: \$684.00  
Subtotal: \$6,385.04

**Total: \$6,385.04**

**Supervisor Signature:**

**Client Signature:**





# Daily Field Ticket

19119-016-0182

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
TOM 0S0  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**LOCATION:**

**JOB DESCRIPTION:** Greenfire Hanging Stone

**DATE:** 2019/9/11

**PO:** 201357

**JOB NO:** 19119

**ACTIVITIES:** finish off moc 080 travel back to Crossfield

## LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Kyle Scott	Foreman - General	<input type="checkbox"/>			5	\$112.58	7	\$75.05	\$1,088.25
Jon Heartley	Welder w/Rig CWB or B-Pressure	<input type="checkbox"/>					7	\$124.65	\$872.55
Zac Dunhame	3rd Year Apprentice	<input type="checkbox"/>					7	\$55.14	\$385.98
Dirk Lundy	3rd Year Apprentice	<input type="checkbox"/>					7	\$55.14	\$385.98

**Subtotal Labour:** **\$2,732.76**

## EQUIPMENT

Equipment	Qty	Rate Type	Rate	Total
Pickup - Crew Cab 4WD 1 Ton	1	Daily	\$270.00	\$270.00
3 Ton Picker/Tool Truck	1	Daily	\$414.00	\$414.00

**Subtotal Equipment:** **\$684.00**

Total Labour: \$2,732.76  
Total Equipment: \$684.00  
Subtotal: \$3,416.76

**Total: \$3,416.76**

**Supervisor Signature:**

**Client Signature:**





## Daily Field Ticket

19119-016-0197

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas

**LOCATION:**

**JOB DESCRIPTION:** Greenfire Hanging Stone

**DATE:** 2019/9/20

**PO:** 201357

**JOB NO:** 19119

**ACTIVITIES:**

### THIRD PARTY

Description	Qty	Rate Type	Rate	Upcharge (%)	Rate (marked-up)	Total
Swift Oilfield Supply INV#S-32171-01	1	Each	\$738.26	10%	\$812.09	\$812.09
Niemeyer's Welding	1	Each	\$305.86	10%	\$336.45	\$336.45
Xceed Oilfield Supply Inv #112255	1	Each	\$1,157.90	10%	\$1,273.69	\$1,273.69
IrisNDT	1	Each	\$7,486.55	10%	\$8,235.21	\$8,235.21
Tomco Ticket #82375	1	Each	\$1,871.57	10%	\$2,058.73	\$2,058.73
Tomco Ticket #81877	1	Each	\$4,522.70	10%	\$4,974.97	\$4,974.97
Tomco	1	Each	\$5,069.16	10%	\$5,576.08	\$5,576.08
Tomco 81879	1	Each	\$2,243.57	10%	\$2,467.93	\$2,467.93

**Subtotal Third Party:** **\$25,735.15**

Total Third Party: \$25,735.15

Subtotal: \$25,735.15

**Total: \$25,735.15**

**Supervisor Signature:**

**Client Signature:**



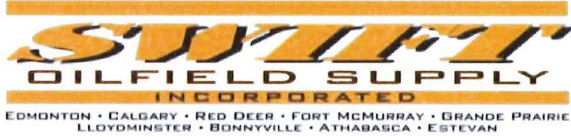




# Daily Field Ticket

19119-016-0197

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca



Date	Invoice No.
09/09/2019	S-32171-01
Terms	Net 30 Days

Please remit all payments to:  
6205 - 97 Street NW, Edmonton, AB T6E 3J5  
Toll Free: 1-888-423-6979 accounting@swiftsupply.ca

BOOM CONSTRUCTION LTD.  
PO BOX 1379 42A MCCOOL CRESCENT  
CROSSFIELD AB T0M 0S0

Your P.O. No.	Ordered By	Packing Slip #	Location
19-119-010	KYLE SCOTT	S-32171-01	FOB EDMONTON

Description	Qty	Rate	Amount
1" SCH 80 (XH) SMLS PIPE SA-106B SRL	129.6000	\$3.63	\$470.45
1" 3000# FS THRD 90 SA-105N	10.0000	\$7.21	\$72.10
1" 3000# FS THRD UNION SA-105N	3.0000	\$8.33	\$24.99
1" 3000# FS SW 90 SA-105N	8.0000	\$4.35	\$34.80
1" 3000# FS SW CPLG SA-105N	4.0000	\$2.60	\$10.40
1 1/2" 3000# FS THRD 90 SA-105N	1.0000	\$15.84	\$15.84
1" 3000# FS THRD TEE SA-105N	1.0000	\$9.57	\$9.57
1" 3000/6000# FS THRD HEX PLUG SA-105N	1.0000	\$2.04	\$2.04
1" x 3" SCH 80 SMLS NIPPLE TBE SA-106B	2.0000	\$3.61	\$7.22
1" x 4" SCH 80 SMLS NIPPLE TBE SA-106B	2.0000	\$3.89	\$7.78
1" x 6" SCH 80 SMLS NIPPLE TBE SA-106B	2.0000	\$4.87	\$9.74

Page 1 of 2



# Daily Field Ticket

19119-016-0197

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca



Date	Invoice No.
09/09/2019	S-32171-01
Terms	Net 30 Days

Please remit all payments to:  
6205 - 97 Street NW, Edmonton, AB T6E 3J5  
Toll Free: 1-888-423-6979 accounting@swiftsupply.ca

BOOM CONSTRUCTION LTD.  
PO BOX 1379 42A MCCOOL CRESCENT  
CROSSFIELD AB T0M 0S0

Your P.O. No.	Ordered By	Packing Slip #	Location
19-119-010	KYLE SCOTT	S-32171-01	FOB EDMONTON

Description	Qty	Rate	Amount
1" 800# THRD GATE VALVE A-105, BB, TRIM 8	1.0000	\$73.33	\$73.33

**Thank you for your Business, from everyone at SWIFT!!**

All commercial transactions are subject to the terms of sale of Swift Oilfield Supply Inc.. All Pricing is valid for 15 days unless otherwise stated. Items may be subject to prior sale. Terms are Net 30 to and pricing is FOB our specified Swift location unless otherwise stated. Partial orders are subject to review. Any product returns must be authorized by Swift Oilfield Supply Inc. and may be subject to restocking charges. Cancellations after receipt of purchase order must be authorized by Swift and may be subject to cancellation charges at the discretion of Swift Oilfield Supply Inc.. Manufacturer direct orders may be deemed non-cancellable at the discretion of Swift Oilfield Supply Inc.. No returns are available on: altered, machined, coated, welded, weld prepared or used products. All product to remain property of Swift Oilfield Supply Inc. until paid in full. Any short or damage issues must be reported within 5 days of receipt of product. Swift Oilfield Supply Inc. reserves the right to maintain and register security against any invoice or product until account status is paid to the satisfaction of Swift Oilfield Supply Inc.

Subtotal	\$738.26
GST	\$36.91
Total	\$775.17

GST No. 854628971

Page 2 of 2



## Daily Field Ticket

19119-016-0197

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca



4711 Phone 403-556-3553  
Olds, Alberta T4H 1E1 Fax 403-556-1981  
Email: sales@niemeyerswelding.ca

### CUSTOM MACHINING & GENERAL REPAIRS

*CNC Custom Machining* *Stick, Tig & Mig Welding of*  
*Shear, Brake & Press Work* *Carbon Steel, Aluminum & Stainless Steel*  
*Steel Sales* *B Pressure Welding*  
*Portable Welding*

SOLD TO

JOB NO./LOCATION

9/4/2019 DATE

BOOM CONSTRUCTION  
BOX 1379  
CROSSFIELD AB T0M 0S0

201686 INVOICE

GST No. 10388-4011

PO No. 19119-007

Salesperson John

DESCRIPTION	QUANTITY /FTOR/HR	PRICE	TOTAL
SUPPLY MATERIALS-ORDERED BY KYLE			
JOB # 19119			
G40.21 HR 44W PLATE 3/4" - 300mm X 300mm	7.00	43.694	305.86

#### TERMS: NET 30 DAYS.

A service charge of 1.5% per month will be charged  
on overdue accounts (18% per annum).

NO RETURN ON CUT METAL.

Sub Total	\$305.86
GST 5%	\$15.29
Total	\$321.15
Paid	\$0.00
Balance	\$321.15

Please print name X \_\_\_\_\_

Signature X \_\_\_\_\_

201686

INVOICE



# Daily Field Ticket

19119-016-0197

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca



XCEED OILFIELD SUPPLY LTD.  
104 - 6439 - 67 STREET  
RED DEER, ALBERTA T4P 1A3



INVOICE  
112255

22-Aug-2019 8:10 am  
Page 1 of 1

P.O. #19116-001

Sold to: BOOCON  
BOOM CONSTRUCTION LTD.  
PO BOX 1379, MCCOOL CRESCENT

Ship to:  
DELIVER TO BOOM CONSTRUCTION

CROSSFIELD, AB T0M 0S0

Item	Description	Ordered	Shipped	BO	Unit \$	Extended
* STL- 6002FB	6" X 1/4" FLAT BAR 44W	20	20		4.310	86.20
* STL- 2020316	2" X 2" X 3/16" HR ANG 44W	80	80		1.980	158.40
* STL- 6082C	6" X 8.2 STR CHAN 44W	40	40		6.610	264.40
* STL- 316BG	3/16 x 1 19-4 B/G SERR BLK 3' X 24'	1	1		648.900	648.90

Stocked Items	Cores	Enviro Charges	Misc Charges	Other Charges	GST	Document Total
1,157.90	0.00	0.00	0.00	0.00	57.90	1,215.80





# Daily Field Ticket

19119-016-0197

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca

# IRIS NDT

Invoice Date  
September 17, 2019

Invoice Number  
IN584463

**SERVICE  
LOCATION**

BOOM CONSTRUCTION LTD.  
PO BOX 1379  
42A MCCOOL CRESCENT  
CROSSFIELD, AB T0M 0S0

**INVOICE  
TO**

BOOM CONSTRUCTION LTD.  
PO BOX 1379  
42A MCCOOL CRESCENT  
CROSSFIELD, AB T0M 0S0

TERMS: NET 30 DAYS, 2% Per Month on Past Due Accounts

Account No.	ORDER No.	Purchase Order No.	LOCATION
4611	19-119	19119-010	GREENFIRE

DESCRIPTION	Quantity	Unit Price	Amount
IRIS# FMN1900218 / 1900221 / 1900222			
WEEK ENDING SEPT 15, 2019			
SEPT 9 - B.WOLGIEN TRAVEL			
SENIOR NDT TECHNICIAN/MULTI CERT	2.00	112.00	224.00
SENIOR NDT TECHNICIAN/MULTI CERT - PREMIUM 1	1.00	168.00	168.00
MT			
SENIOR NDT CREW/MULTI CERT	2.00	173.00	346.00
MAGNETIC PARTICLE EQUIPMENT	2.00	10.00	20.00
MAGNETIC PARTICLE CONSUMABLES	1.00	15.00	15.00
KILOMETERS	55.00	1.10	60.50
RT			
SENIOR NDT CREW/MULTI CERT	4.00	173.00	692.00
IRIDIUM	4.00	5.00	20.00
FILM 70MM X 17.0"	18.00	6.80	122.40
FILM 3.5" X 8.5"	2.00	9.10	18.20
KILOMETERS	55.00	1.10	60.50
SEPT 10 - MT			
SENIOR NDT CREW/MULTI CERT	2.00	173.00	346.00
MAGNETIC PARTICLE EQUIPMENT	2.00	10.00	20.00
MAGNETIC PARTICLE CONSUMABLES	1.00	15.00	15.00
KILOMETERS	55.00	1.10	60.50
RT			
SENIOR NDT CREW/MULTI CERT	6.00	173.00	1,038.00
SENIOR NDT CREW/MULTI CERT - PREMIUM 1	2.00	259.50	519.00
SENIOR NDT CREW/MULTI CERT - PREMIUM 2	2.00	311.40	622.80

Continued on next page ....

Page 1 of 2



**BOOM**  
CONSTRUCTION

# Daily Field Ticket

19119-016-0197

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca

**IRIS NDT**

Invoice Date  
September 17, 2019

Invoice Number  
IN584463

**SERVICE  
LOCATION**

BOOM CONSTRUCTION LTD.  
PO BOX 1379  
42A MCCOOL CRESCENT  
CROSSFIELD, AB T0M 0S0

**INVOICE  
TO**

BOOM CONSTRUCTION LTD.  
PO BOX 1379  
42A MCCOOL CRESCENT  
CROSSFIELD, AB T0M 0S0

**TERMS: NET 30 DAYS, 2% Per Month on Past Due Accounts**

Account No.	ORDER No.	Purchase Order No.	LOCATION
4611	19-119	19119-010	GREENFIRE

DESCRIPTION	Quantity	Unit Price	Amount
IRIDIUM	10.00	5.00	50.00
MINIMUM - FILM CHARGE PER HOUR PER MAN	10.00	25.00	250.00
KILOMETERS	55.00	1.10	60.50
OVERTIME MEAL	2.00	20.00	40.00
SEPT 11 - RT			
SENIOR NDT CREW/MULTI CERT - PREMIUM 2	5.00	311.40	1,557.00
SENIOR NDT CREW/MULTI CERT - SHIFT	5.00	16.75	83.75
IRIDIUM	5.00	5.00	25.00
MINIMUM - FILM CHARGE PER HOUR PER MAN	5.00	25.00	125.00
KILOMETERS	110.00	1.10	121.00
B.WOLGIEN TRAVEL			
SENIOR NDT TECHNICIAN/MULTI CERT - PREMIUM 2	4.00	201.60	806.40

Remit To IRISNDT Corp.  
5311 - 88 Street  
EDMONTON, AB T6E 5T8  
Ph: (780) 437-2022 Fax: (780) 438-1436

Subtotal before taxes	7,486.55
Goods and Services Tax (BN 10251 3884 RT)	374.33
<b>TOTAL</b>	<b>7,860.88</b>

*TITLE and OWNERSHIP of Film and Reports does not transfer to you until payment in full has been received.*

IRISNDT is pleased to announce that we are now offering Rope Access Services

Invoice

Page 2 of 2



**Daily Field Ticket**  
19119-016-0197



WEEK ENDING SEPT 15, 2019  
BOOM CONSTRUCTION LTD  
CUSTOMER # 4611  
INV# IN584463

[illegible]



## Daily Field Ticket

19119-016-0197

**BOOM**  
CONSTRUCTION


I NS84463

IRISNDT		DAILY LEM TIME-TICKET								IRISNDT DAILY TIME-TICKET	
Customer: BOOM CONSTRUCTION LTD.		IRISNDT DISPATCH #: FMN1900218				Location: GREENFIRE				Date: 2019-Sep-09	
Technician 1: Bret Wolgien		Position: Senior Tech		Technician 2: Jonathan Sheppard(0900-1500)		Position: CEDO		Primary Activity: RT - Radiographic Testing		Report Prefix: CA1505-	
Technician 3:		Position:		Technician 4:		Position:					
Time Start	Time Finish	Activity	Report #s	LOC	Total Hours	Total KM's	Description	PO/Cost Code/APE	Job #/Work Order		
		Bret Wolgien									
06:00	10:00	Travel			4	55					
10:00	11:00	MT - Magnetic Particle	MT3-28		1		Greedfire MOC 080 - Onsite Fab Piping	P.O.#:	19119-010	Job #:	19
11:00	14:00	RT - Radiographic Testing	RT-15		3						
14:00	15:00	Travel			1	55					
					Total	9					
		Jonathan Sheppard									
0900	1000	Travel			1						
1000	1100	MT			1						
1100	1400	RT			3						
1400	1500	Travel			1						
					Total	6					
(Totals for this page only)					Totals:	8	110	Unit: 833			
Work Location (LOC) Legend: 1) Inside Fab Shop 2) Yard/Lay-down Area 3) Piping/Modular Fab. Area 4) Other											
J.H.A. Carried Out & Documented: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Safety Concerns: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Safety Meeting: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Living Out Allowance: <input type="checkbox"/> N/A <input type="checkbox"/> Full <input type="checkbox"/> Skillet <input type="checkbox"/> Lunch <input type="checkbox"/> Supper <input type="checkbox"/> OT Meal											
Equipment, Supplies, Consumables, and Other Costs											
18-2.75" x 17" D5 Film / 2-3.5" x 8.5" D5 Film / Minimum											
Additional Site, Daily, and other relevant job notes											
3R 10T1 > B.W. 6R Both											
TECHNICIAN NAME:		Bret Wolgien				CLIENT NAME:		Kyle Scott			
(Print)						(Print)					
TECHNICIAN SIGNATURE:						CLIENT SIGNATURE:					
(Sign)						(Sign)					
		Tech Date: 2019-Sep-09						Client Date:			

2019-Sep-09 13:20

IRISNDT-



# Daily Field Ticket

19119-016-0197

# BOOM

CONSTRUCTION



IRIS NDT		MAGNETIC PARTICLE INSPECTION REPORT	CA1505-MT3-28 Page 1 of 1																																			
Procedure: 5.0      Rev: 3 Technique: MT-2V Code/Standard: ASME B31.3 S - Sect 341.3.2(a) & 344.3.2-18 Other: ASME Sec V, Art 7		Client: BOOM CONSTRUCTION LTD. IRIS NDT #: FMN1900218 Location: Greefire Item Inspected: Greenfire MOC 080 - Onsite Fab Piping																																				
Date: 2019-Sep-09		Job #: 19-119																																				
PO #: 19119-010																																						
Project Name:		Project #:																																				
Specification:		Standard:																																				
Surface Condition: Buffed	Material: Carbon Steel	Thickness: SEE BELOW	Heat Treatment: Not Applicable																																			
Magnetizing Equipment: Yoke	Method of Magnetization: AC Continuous	Asset #: 40194	Mfg: Contour Probe																																			
Verification Date: 2019-Sep-09	Verification Weight: <input checked="" type="checkbox"/> 10 lb. <input type="checkbox"/> 40 lb.	Asset #: 49134	Verification per ASME V Art 7 T-762																																			
Magnetic Particles: Dry <input type="checkbox"/> Wet <input checked="" type="checkbox"/> Red <input type="checkbox"/> Grey <input type="checkbox"/> Black <input checked="" type="checkbox"/> Fluorescent <input type="checkbox"/>																																						
Batch #: 18E060-119		Type: 8A / TC																																				
<input checked="" type="checkbox"/> Background																																						
Batch #: 65032919		Type: 8901W																																				
<input type="checkbox"/> Blacklight (N/A)																																						
Asset #:		Cal Due Date:																																				
<input checked="" type="checkbox"/> Whitelight																																						
Lighting Equipment: Yoke Light (10W)		Verification per ASME V Art 7 T-777.1																																				
Inspection Scope:																																						
Job Scope: Perform Black on White Magnetic Particle Inspection on the Following FILLET TYPE WELDS as Per Clients Request.																																						
<table border="1" style="width: 100%; border-collapse: collapse; font-size: 0.8em;"> <thead> <tr> <th>MPIS / Welds</th> <th>Drawing# / LINE#</th> <th>WELDER ID</th> <th>DESCRIPTION</th> <th>Accept / REJECT</th> </tr> </thead> <tbody> <tr> <td>7 / FW-032</td> <td>A-163-0"-05-75H 1/1</td> <td>JH</td> <td>8" SCH 80 SHOE</td> <td>Accept</td> </tr> <tr> <td>8 / FW-033</td> <td>P-162-0"-05-75H 1/1</td> <td>JH</td> <td>8" SCH 80 SHOE</td> <td>Accept</td> </tr> <tr> <td>9 / FW-038</td> <td>BW-175-1 1/2"-8A</td> <td>JH</td> <td>1" SCH 80 SOCKET WELD</td> <td>Accept</td> </tr> <tr> <td>10 / FW-039</td> <td>BW-175-1 1/2"-8A</td> <td>JH</td> <td>1" SCH 80 SOCKET WELD</td> <td>Accept</td> </tr> <tr> <td>11 / FW-040</td> <td>BW-175-1 1/2"-8A</td> <td>JH</td> <td>1" SCH 80 SOCKET WELD</td> <td>Accept</td> </tr> <tr> <td>12 / FW-041</td> <td>BW-175-1 1/2"-8A</td> <td>JH</td> <td>1" SCH 80 SOCKET WELD</td> <td>Accept</td> </tr> </tbody> </table>				MPIS / Welds	Drawing# / LINE#	WELDER ID	DESCRIPTION	Accept / REJECT	7 / FW-032	A-163-0"-05-75H 1/1	JH	8" SCH 80 SHOE	Accept	8 / FW-033	P-162-0"-05-75H 1/1	JH	8" SCH 80 SHOE	Accept	9 / FW-038	BW-175-1 1/2"-8A	JH	1" SCH 80 SOCKET WELD	Accept	10 / FW-039	BW-175-1 1/2"-8A	JH	1" SCH 80 SOCKET WELD	Accept	11 / FW-040	BW-175-1 1/2"-8A	JH	1" SCH 80 SOCKET WELD	Accept	12 / FW-041	BW-175-1 1/2"-8A	JH	1" SCH 80 SOCKET WELD	Accept
MPIS / Welds	Drawing# / LINE#	WELDER ID	DESCRIPTION	Accept / REJECT																																		
7 / FW-032	A-163-0"-05-75H 1/1	JH	8" SCH 80 SHOE	Accept																																		
8 / FW-033	P-162-0"-05-75H 1/1	JH	8" SCH 80 SHOE	Accept																																		
9 / FW-038	BW-175-1 1/2"-8A	JH	1" SCH 80 SOCKET WELD	Accept																																		
10 / FW-039	BW-175-1 1/2"-8A	JH	1" SCH 80 SOCKET WELD	Accept																																		
11 / FW-040	BW-175-1 1/2"-8A	JH	1" SCH 80 SOCKET WELD	Accept																																		
12 / FW-041	BW-175-1 1/2"-8A	JH	1" SCH 80 SOCKET WELD	Accept																																		
<b>RESULTS:</b> There Were No Rejectable Indications Noted at the TIME of Inspection & Deemed Acceptable to Code.																																						
Inspection Limitation(s):																																						
Units: 833      Kilometer: _____ In: _____ Out: _____ Hrs: _____ In: _____ Out: _____ Hrs: _____ Personnel: B. WOLGLEN J. SHEPPARD		Consumables: _____ Interpretation by: Bret Wolglen      INT-TC-1A: II (Print)      C.O.S.B.: II (Level) (Sign)      C.O.S.B #: 10583 Client Representative: _____ (Print)      I am in full agreement with report contents (Sign)																																				
5311 - 88 Street NW, Edmonton, Alberta T6E 6T8 Phone (780) 437-4247 Fax (780) 435-4873 Calgary (403) 278-6121 Cold Lake (780) 926-6105 Lloydminster (780) 875-8485 Fort McMurray (780) 743-1538 Barrhead (780) 674-5018 Red Deer (403) 347-1742 Nisku (780) 955-7616 <a href="http://www.irisndt.com">www.irisndt.com</a>																																						
Engineering, Calgary (403) 217-9984 Engineering, Edmonton (780) 437-2922 Rope Access Services (780) 437-2922 Offices also located in USA and UK																																						

2019-Sep-09 13:19

IRIS NDT-CA-E-2076A


# Daily Field Ticket

19119-016-0197

# BOOM

CONSTRUCTION



IRIS NDT										RADIOGRAPHIC INSPECTION REPORT		CA1505-RT-15 Page 1 of 1			
Exposure Device #: D5821				Source #: 83407G				Client: BOOM CONSTRUCTION LTD.				Date: 2019-Sep-09			
Gamma Type: IR 192				EFSS: 0.152"				IRISNDT #: FMN1900218				Job #: 19-119			
Procedure: 3.0				Revision: 3				Location: GREENFIRE				PO #: 19119-010			
Code: ASME B31.3 S - Table 341.3.2				2015				Material: Carbon Steel							
Other: ASME Sec V, Art 2								Item Inspected: Greenfire MOC 080 - Onsite Fab Piping							
Film #	Size, Location, Thickness	Welder ID	Tech.	S.O.D. inches	O.F.D. inches	# of Exp.	Work Loc.	Film Type	MWR	Type and Location of Discontinuities (rejectable discontinuities in square brackets (I))	(A)cept (R)ect				
NDI# / Welds															
1 / FW-001	6" SCH 80	JH	RT3	6.57	.682	3	2.5-2.9	D5	1/8"	P-162-6"-BS-75H 1/1 IC@4",4.5",15.75"	A				
2 / FW-002	6" SCH 80	JH	RT3	6.57	.682	3	2.5-2.9	D5	1/8"	IC@20.5",3.5",8.75",8@21.25",P@5.5",7.25"	A				
3 / FW-003	6" SCH 80	JH	RT3	6.57	.682	3	2.4-2.8	D5	1/8"		A				
P-161-6"-BS-75H 1/1															
4 / FW-004	6" SCH 80	JH	RT3	6.57	.682	3	2.3-2.9	D5	1/8"		A				
5 / FW-005	6" SCH 80	JH	RT3	6.57	.682	3	2.5-3.0	D5	1/8"	IC@6.75",12.75"	A				
6 / FW-006	6" SCH 80	JH	RT3	6.57	.682	3	2.4-2.8	D5	1/8"		A				
RW-175-1 1/2"-BA															
9 / FW-008	1" SCH 80	JH	RT8	12	1.0	1	N/A	D5	1/8"	EST. GAP=1.56mm	A				
10 / FW-009	1" SCH 80	JH	RT8	12	1.0	1	N/A	D5	1/8"	EST. GAP=2.6-3.0mm	A				
11 / FW-010	1" SCH 80	JH	RT8	12	1.0	1	N/A	D5	1/8"	EST. GAP=1.75mm	A				
12 / FW-011	1" SCH 80	JH	RT8	12	1.0	1	N/A	D5	1/8"	EST. GAP=3.0mm	A				
WD=WELD DENSITY															
Work Location Legend: [1] Inside Fab. Shop [2] Yard/Lay-down Area [3] Piping/Modular Fab. Area [4] N/A (Other)															
RT Techniques: Exposure Viewing Technique S.W.E. S.W.V. 1.2,2A,5.5A,7 D.W.E. S.W.V. 3.3A D.W.E. D.W.V. 4.5B				S.O.D. = Source-to-Object Distance (D) O.F.D. = Distance from source side of Object-to-Film (d) Lead Screens - Front & Back 0.01" / .25mm Thk.				AB - Arc Burn BT - Burn Through CC - Crack EP - Excessive Penetration P - Porosity SI - Shrinkage Indication				EUC - External Undercut IUC - Internal Undercut HIS - Hollow Head IP - Incomplete Penetration S - Slag PM - Pitting			
IC - Internal Concavity LP - Lack of Fusion LC - Low Cover MA - Misalignment TI - Tungsten Inclusion RI - Rounded Indication															
Unit: 833				Film Requirements				Interpretation by:							
In: _____ Out: _____ Hrs: _____				Film Brand: AGFA				Bret Wolglen				SNT-TC-1A: II			
In: _____ Out: _____ Hrs: _____				Qty: _____ Size: 2 1/2 x 17				(Print) 				C.G.S.B. P: II			
In: _____ Out: _____ Hrs: _____				2. 3 1/2 x 8 1/2				(Sign) _____				C.G.S.B. R: 10563			
Personnel: BRET WOLGLEN JONATHAN SHEPPARD								Client Representative: _____							
								I am in full agreement with report contents							
								(Sign) _____							
9311 - 86 Street NW, Edmonton, Alberta T5E 5T8 Phone (780) 437-4747 Fax (780) 436-4873															
Calgary (403) 279-6121				Cold Lake (780) 636-6106				Engineering, Calgary (403) 217-8854							
Lloydminster (780) 875-6458				Fort McMurray (780) 743-1536				Engineering, Edmonton (780) 437-5022							
Banff (780) 674-3018				Red Deer (403) 347-1742				Reps Across Services (780) 437-2022							
Niisku (780) 955-7616				www.irisndt.com				Offices also located in USA and UK							

2019-Sep-09 13:17

IRISNDT-CA-E-20648



# Daily Field Ticket

19119-016-0197

# BOOM

CONSTRUCTION



<h1>IRISNDT</h1>				DAILY LEM TIME-TICKET				IRISNDT DAILY TIME-TICKET							
Customer: BOOM CONSTRUCTION LTD.				IRISNDT DISPATCH #: FMN1900221				Location: GREENFIRE				Date: 2019-Sep-10			
Technician 1: <u>Bret Wolgien</u> Position: <u>Senior Tech</u>				Technician 2: <u>Jonathan Sheppard</u> <sup>3w</sup> Position: <u>CEDO</u>				Primary Activity: <u>RT - Radiographic Testing</u>				Report Prefix: <u>CA1505-</u>			
Technician 3: _____ Position: _____				Technician 4: _____ Position: _____											
Time Start	Time Finish	Activity	Report #s	LOC	Total Hours	Total KM's	Description	PO/Code/AFE	Job #/Work Order						
09:00	10:00	Travel			1	55									
10:00	11:00	MT - Magnetic Particle	MT3-29		1		Greenfire MOC 080 - Onsite Fab Piping	P.O.#:	19119-010	Job #:	19				
11:00	20:00	RT - Radiographic Testing	RT-16		9										
20:00	21:00	Travel			1	55									
(Totals for this page only)					Totals:	12	110	Unit: 833							
Work Location (LOC) Legend: 1) Inside Fab. Shop 2) Yard/Lay-down Area 3) Piping/Modular Fab. Area 4) Other															
J.H.A. Carried Out & Documented: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Safety Concerns: <input type="checkbox"/> Yes <input type="checkbox"/> No Safety Meeting: <input type="checkbox"/> Yes <input type="checkbox"/> No Living Out Allowance: <input type="checkbox"/> N/A <input type="checkbox"/> Full <input type="checkbox"/> Blkfst <input type="checkbox"/> Lunch <input type="checkbox"/> Supper <input type="checkbox"/> OT Meal															
Equipment, Supplies, Consumables, and Other Costs															
24-2.75" x 17" D5 Film / Minimum / Standby Included															
Additional Site, Daily, and other relevant job notes															
8R 20T1 20T2 0T															
TECHNICIAN NAME: <u>Bret Wolgien</u>				CLIENT NAME: <u>Kyle Scott</u>											
(Print)				(Print)											
TECHNICIAN SIGNATURE: <u>[Signature]</u>				Tech Date: 2019-Sep-10				CLIENT SIGNATURE: <u>[Signature]</u>				Client Date:			
(Sign)								(Sign)							

2019-Sep-10 18:41

IRISNDT

# Daily Field Ticket

19119-016-0197



IRIS NDT		MAGNETIC PARTICLE INSPECTION REPORT		CA1505-MT3-29 Page 1 of 1	
Procedure: 5.0		Rev: 3		Client: BOOM CONSTRUCTION LTD.	
Technique: MT-2V		IRIS NDT #: FMN1900221		Date: 2019-Sep-10	
Code/Standard: ASME B31.3 & Sec 341.3.2(a) & 344.3.2-19		Location: Greifire		Job #: 19-119	
Other: ASME Sec V, Art 7		Item Inspected: Greifire MOC 080 - Onsite Fab Piping (PWHT)		PO #: 19119-010	
Project Name:			Project #:		
Specification:			Standard:		
Surface Condition: Buffed		Material: Carbon Steel		Thickness: SEE BELOW	
Magnetizing Equipment: Yoke		Method of Magnetization: AC Continuous		Asset #: 40194	
Verification Date: 2019-Sep-10		Verification Weight: <input checked="" type="checkbox"/> 10 lb. <input type="checkbox"/> 40 lb.		Asset #: 49134	
Magnetic Particles: Dry <input type="checkbox"/> Wet <input checked="" type="checkbox"/>		Red <input type="checkbox"/> Grey <input type="checkbox"/> Black <input checked="" type="checkbox"/> Fluorescent <input type="checkbox"/>		Type: 8A / 7C	
Batch #: 18E080-119		Manufacture: Magnaflex		Type: 8A / 7C	
<input checked="" type="checkbox"/> Background		Batch #: 65032919		Manufacture: ARDROX	
<input type="checkbox"/> Blacklight (N/A)		Type: 8901W		Type: 8901W	
Asset #:		Blacklight meter: Asset #:		Cal Due Date:	
<input checked="" type="checkbox"/> Whitelight		Lighting Equipment: Yoke Light (10W)		Verification per ASME V Art 7 T-777.1	
Inspection Scope:					
Job Scope: Perform Black on White Magnetic Particle Inspection on the Following PWHT FILLET TYPE WELDS as Per Clients Request.					
MPIS / Weld	Drawing / LINE	WELDER ID	DESCRIPTION	Accept / REJECT	
AS-7 / PW-093	P-161-6"-85-75H 1/2	JH	6" SCH 80 SHO	Accept	
AS-8 / PW-093	P-162-6"-85-75H 1/2	JH	6" SCH 80 SHO	Accept	
AS=After Stress					
RESULTS: There Were No Rejectable Indications Noted at the TIME of Inspection & Deemed Acceptable to Code.					
Inspection Limitation(s):					
Unit: 823		Inspector:		Consumables:	
In: _____	Out: _____	In: _____		In: _____	
In: _____	Out: _____	In: _____		In: _____	
Personal:		Interpretation by:		SNT-TC-1A: II	
B. WOLGISH		Bret Wolgish		C.G.S.B. II	
J. SHEPPARD		(Print)		(Level)	
		(Sign)		C.G.S.B. #: 10583	
		Client Representative:		(Print)	
		I am in full agreement with report contents		(Sign)	
8311 - 88 Street NW, Edmonton, Alberta T6E 2T8 Phone (780) 437-4747 Fax (780) 435-4873 Calgary (403) 278-8121 Cold Lake (780) 826-6105 Engineering, Calgary (403) 217-9664 Lloydminster (780) 875-9456 Fort McMurray (780) 743-1539 Engineering, Edmonton (780) 437-2022 Barhead (780) 674-3018 Red Deer (403) 347-1742 Rope Access Services (780) 437-2022 Hestia (780) 825-7616 www.irisndt.com Offices also located in USA and UK					
2019-Sep-10 18:40					
IRIS NDT-CA-E-2078A					



# Daily Field Ticket

19119-016-0197

# BOOM

CONSTRUCTION



IRISNDT										RADIOGRAPHIC INSPECTION REPORT		CA1505-RT-16 Page 1 of 1	
Exposure Device #: D6821				Source #: 83407G				Client: BOOM CONSTRUCTION LTD.				Date: 2019-Sep-10	
Gamma Type: IR 192				EFSS: 0.152"				IRISNDT #: FMN1900221				Job #: 19-119	
Procedure: 3.0				Revision: 3				Location: GREENFIRE				PO #: 19119-010	
Code: ASME B31.3 S - Table 341.3.2				2016				Material: Carbon Steel					
Other: ASME Sec V, Art 2								Item Inspected: Greenfire MOC 080 - Onsite Fab Piping & PWHT					
Film #	Size, Location, Thickness	Welder ID	Tech.	S.O.D. Inches	O.F.D. Inches	# of Exp.	Work Loc.	Film Type	MWR	Type and Location of Discontinuities (rejectionable discontinuities in square brackets [ ])	(A)cept (R)ect		
**THE FOLLOWING 6 WELDS ARE PWHT**													
NDE# / Weld#							WD			P-162-6"-BS-75H 1/1			
AS-1 / FW-001	6" SCH 80	JH	RT3	6.57	.682	3	2.6-3.1	D5	1/8"	IC@4", 4.5", 15.75"	A		
AS-2 / FW-002	6" SCH 80	JH	RT3	6.57	.682	3	2.4-2.9	D5	1/8"	IC@20.75", 8.76", S@21.25", P@5.25", 7.25"	A		
AS-3 / FW-003	6" SCH 80	JH	RT3	6.57	.682	3	2.8-3.2	D5	1/8"		A		
P-161-6"-BS-75H 1/1													
AS-4 / FW-004	6" SCH 80	JH	RT3	6.57	.682	3	2.3-3.2	D5	1/8"		A		
AS-5 / FW-005	6" SCH 80	JH	RT3	6.57	.682	3	2.3-3.1	D5	1/8"	IC@8.75", 13"	A		
AS-6 / FW-006	6" SCH 80	JH	RT3	6.57	.682	3	2.4-3.3	D5	1/8"		A		
AS=After Stress													
THE FOLLOWING 2 WELDS ARE NOT PWHT													
P-122-6"-BS-75H 1/1													
10 / FW-034	6" SCH 80	JH	RT3	6.57	.682	3	2.4-3.0	D5	1/8"	P@10", 10.25"	A		
11 / FW-035	6" SCH 80	JH	RT3	6.57	.682	3	2.4-3.2	D5	1/8"	P@11"	A		
WD=WELD DENSITY													
Work Location Legend: [1] Inside Fab. Shop [2] Yard/Lay-down Area [3] Piping/Modular Fab. Area [4] N/A (Other)													
RT Technique: Exposure Viewing Technique S.W.E. S.W.V. 1.2, 2A, 3, 3A, 7 D.W.E. D.W.V. 3.3 D.W.E. D.W.V. 4.8, 8				S.O.D. = Source-to-Object Distance (D) O.F.D. = Distance from source side of Object to Film (d) Lead Screens - Front & Back 0.01" / .25mm Thk.				Art - Arc Burn BT - Burn Through CS - Crack EP - Excessive Penetration P - Porosity EI - Elongated Indication EUC - External Undercut IUC - Internal Undercut IB - Insufficient Bead IP - Incomplete Penetration S - Slag PM - Filmmark IC - Internal Concavity LF - Lack of Fusion LC - Line Crack MA - Misalignment TI - Tungsten Inclusion RI - Rounded Indication					
Unit#: 835 Name: _____ In: _____ Out: _____ Hrs: _____ Personnel: BRET WOLGIEN JONATHAN SHEPPARD				Film Requirements Film Brand: AGFA Qty: 24 Size: 2 1/4 x 17				Interpretation by: Bret Wolgien (Print) _____ (Sign) _____ Client Representative: _____ (Print) _____ (Sign) _____ I am in full agreement with report contents					
8311 - 88 Street NW, Edmonton, Alberta T6E 5T8 Phone (780) 437-4747 Fax (780) 435-4873 Calgary (403) 275-8121 Cold Lake (780) 825-8106 Lloydminster (780) 875-8455 Fort McMurray (780) 743-1536 Redhead (780) 674-3035 Red Deer (403) 241-1742 Hinton (780) 885-7016 www.irisndt.com Engineering, Calgary (403) 217-9684 Engineering, Edmonton (780) 437-2022 Rope Access Services (780) 437-2022 Offices also located in USA and UK													

2019-Sep-10 18:41

IRISNDT-CA-E-2004S

[illegible]



[illegible]

# DESCRIPTION OF WORK

TRAVEL TO Site  
 ATTEND site specific orientation  
 Set up For RWT  
 Set up complete RWT box 6" sch 80 and 2x weld on site  
 Set up SF For Cold cut 6" sch 80  
 TRAVEL TO camp

Job# 19119-005  
 Job# 19119

183

EMPLOYEE	CLASS	HRS.	UNIT PRICE	AMOUNT	EQUIPMENT	KM.	DAY	HRS.	UNIT PRICE	AMOUNT
Fixed	T.T.	1	68.00	68.00	Unit 145	45	1		96	43.20
STRAW	O.T.T.				Unit 200	28	1		1.25	35.00
	R.T.	8			Compressor		1			210.00
	O.T.	4 1/2			6" RWT (assumed 8x6")	48"			4.00	192.00
	R.T.				8" SF		1			428.00
Norm	T.T.	1	68.00	68.00	6" sch 80 300" H/A		1			519.00
STRAW	O.T.T.				6" Isolation Box		4		18.00	72.00
	R.T.	8			4 Heavy on site		2			100.00
	O.T.	4 1/2			Truck on Site					100.00
	R.T.				PWT-183 Jones	RT	8		205.00	1640.00
	T.T.				(labour incl.)	OT	4.5		255.00	1147.50
	O.T.T.									
	R.T.									
	O.T.									
	R.T.									
	T.T.									
	O.T.T.									
	R.T.									
	O.T.									
	R.T.									

Total Labour	136	00
Total Equipment	4386	70
Subsistence M/Days @		
<b>Total</b>	<b>4522</b>	<b>70</b>

THIS IS NOT A FINAL INVOICE  
 FUEL SURCHARGE MAY APPLY

Was the job performed to your satisfaction? ☐ Yes ☐ No

If not would you like us to give you a call? ☐ Yes ☐ No

Phone # \_\_\_\_\_

TOMCO  
 Job Number:

81908207

Customer  
 Order Number:

19119

Customer  
 Approval:

Kyle Scott

Customer  
 E-mail:

Kscott@boomhd.ca

# DESCRIPTION OF WORK

Travel Bonnyville to Sand tiger Lodge

EMPLOYEE	CLASS	HRS.	UNIT PRICE	AMOUNT	EQUIPMENT	KM.	DAY	HRS.	UNIT PRICE	AMOUNT
Fixed	T.T.				Unit 145	417	1			
STRAW	O.T.T.	5	95.00	475.00	Unit 200	417	1			
	R.T.									
	O.T.									
	R.T.									
Norm	T.T.									
STRAW	O.T.T.	5	95.00	475.00						
	R.T.									
	O.T.									
	R.T.									
	T.T.									
	O.T.T.									
	R.T.									
	O.T.									
	R.T.									
	T.T.									
	O.T.T.									
	R.T.									
	O.T.									
	R.T.									

Total Labour	950	00
Total Equipment	921	57
Subsistence M/Days @		
<b>Total</b>	<b>1871</b>	<b>57</b>

THIS IS NOT A FINAL INVOICE  
 FUEL SURCHARGE MAY APPLY

Was the job performed to your satisfaction? ☐ Yes ☐ No

If not would you like us to give you a call? ☐ Yes ☐ No

Phone # \_\_\_\_\_

TOMCO  
 Job Number:

81908207

Customer  
 Order Number:

19119

Customer  
 Approval:

Kyle Scott

Customer  
 E-mail:

Kscott@boomhd.ca



DESCRIPTION OF WORK											
TRAVEL TO Site Clear up site / mo, 3 equipment TRAVEL TO Beauport											
PD# 19119-005 Job# 19119											
EMPLOYEE	CLASS	HRS.	UNIT PRICE	AMOUNT	EQUIPMENT	KM.	DAY	HRS.	UNIT PRICE	AMOUNT	
Fred	T.T.	5	68.00	340.00	Unit 145	417	1		96	400.32	
Stefan	O.T.T.				Unit 200	417	1			521.25	
	R.T.	4	81.50	326.00							
	O.T.										
	P.T.										
Norm	T.T.	5	68.00	340.00							
Sivret	O.T.T.										
	R.T.	4	79.00	316.00							
	O.T.										
	P.T.										
	T.T.										
	O.T.T.										
	R.T.										
	O.T.										
	P.T.										
	T.T.										
	O.T.T.										
	R.T.										
	O.T.										
	P.T.										

Total Labour	1322	00
Total Equipment	921	57
Subsistence M/Days @		
<b>Total</b>	<b>2243</b>	<b>57</b>

THIS IS NOT A FINAL INVOICE  
FUEL SURCHARGE MAY APPLY

Was the job performed to your satisfaction? ☐ Yes ☐ No

If not would you like us to give you a call? ☐ Yes ☐ No

Phone # \_\_\_\_\_

TOMCO  
Job Number: B1908207

Customer  
Order Number: 19119

Customer  
Approval: Kyle Scott

Customer  
E-mail: Kscott@beam140.ca

DESCRIPTION OF WORK											
TRAVEL TO Site Strip Postcard - move unit 200 Set up / complete 2ea 6" sch 80 cold cut Install 2ea 6" 250 BOLS Standby For welding / night Set up / complete 2ea 6" sch 80 300" HYDRO Test Complete Unit 2ea 6" 300" FISHING TRAVEL TO Camp											
PD# 19119-005 Job# 19119											
EMPLOYEE	CLASS	HRS.	UNIT PRICE	AMOUNT	EQUIPMENT	KM.	DAY	HRS.	UNIT PRICE	AMOUNT	
Fred	T.T.	1	68.00	68.00	Unit 145	446	1				
Stefan	O.T.T.				Unit 200		1				
	R.T.	8			Compressor						
	O.T.	8			6" PWT consumable (2x16)						
	P.T.				8" SF						
Norm	T.T.	1	68.00	68.00	6" sch 80 300" Hydro		1				
Sivret	O.T.T.				6" Isolating Bolt		4				
	R.T.	8			4 Rods / monitor		2				
	O.T.	8			PWT=12 Zone		BT	8			
	P.T.				(Labour incl.)		OT	8			
	T.T.				Truck on Site						
	O.T.T.										
	R.T.										
	O.I.										
	P.T.										
	T.T.										
	O.T.T.										
	R.T.										
	O.T.										
	P.T.										

Total Labour	136	00
Total Equipment	4933	16
Subsistence M/Days @		
<b>Total</b>	<b>5069</b>	<b>16</b>

THIS IS NOT A FINAL INVOICE  
FUEL SURCHARGE MAY APPLY

Was the job performed to your satisfaction? ☐ Yes ☐ No

If not would you like us to give you a call? ☐ Yes ☐ No

Phone # \_\_\_\_\_

TOMCO  
Job Number: B1908207

Customer  
Order Number: 19119

Customer  
Approval: Kyle Scott

Customer  
E-mail: Kscott@beam140.ca



Box 1379  
42A McCool Cres  
Crossfield, AB T0M 0S0

## Invoice

Invoice#: 20180587

Date: 10/08/2019

**Billed To:** Greenfire Hangingstone Operating Corporation  
1650, 444 - 5 Avenue SW  
Calgary AB T2P 2T8

**Project:** Greenfire MOC Work  
1650, 444 - 5 Avenue SW  
Calgary AB T2P 2T8

**Due Date:** 10/08/2019

**Terms:**

**Order#** 900075

Description	Unit	Quantity	Price	Amount
As per attached spreadsheet		1.0000	45,207.370000	45,207.37

Total:	45,207.37	Holdback:	0.00	Invoice Amount:	45,207.37
		GST Taxable:	45,207.37	GST:	2,260.37
		PST Taxable:	0.00	PST:	0.00
				Invoice Total:	47,467.74
				<b>Amount Due</b>	<b>47,467.74</b>
GST/HST Id#: 139628697RT0001					

A service charge of 10 %  
per month will be charged on all amounts  
overdue on regular statement dates.

Thank you for your prompt payment!



Box 1379  
42A McCool Cres  
Crossfield, AB T0M 0S0

## Invoice

Invoice#: 20180619

Date: 11/13/2019

**Billed To:** Greenfire Hangingstone Operating Corporation  
1650, 444 - 5 Avenue SW  
Calgary AB T2P 2T8

**Project:** 8" Spool Greenfire Hangingstone  
#1650, 444 5th Avenue SW  
Calgary AB T2P 2T8

**Due Date:** 11/13/2019

**Terms:**

**Order#** 201587

Description	Unit	Quantity	Price	Amount
As per attached spreadsheet		1.0000	10,859.150000	10,859.15

Total:	10,859.15	Holdback:	0.00	Invoice Amount:	10,859.15
		GST Taxable:	10,859.15	GST:	542.96
		PST Taxable:	0.00	PST:	0.00
				Invoice Total:	11,402.11
				<b>Amount Due</b>	<b>11,402.11</b>
GST/HST Id#: 139628697RT0001					

A service charge of 2 %  
per month will be charged on all amounts  
overdue on regular statement dates.

Thank you for your prompt payment!

# Daily Field Ticket

19170-016-0262

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
TOM OSO  
403 946.0066  
www.boomltd.ca

CUSTOMER: Green Fire Oil & Gas

LOCATION: 13-26-084-11 W4M

JOB DESCRIPTION: 8" Spool

DATE: 2019/10/24

PO: 201587

JOB NO: 19170

ACTIVITIES: receive material cut and tack pup lengths weld out spool build shoes and weld to pipe

## LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Danial Babchuk	Journeyman	<input type="checkbox"/>	8	\$58.71	4	\$88.07			\$821.96
Caleb Sonnenberg	Welder w/Rig CWB or B-Pressure	<input type="checkbox"/>	12	\$124.65					\$1,495.80
Kyle Scott	Project Manager	<input type="checkbox"/>	4	\$119.54					\$478.16

Subtotal Labour: **\$2,795.92**

Total Labour: \$2,795.92

Subtotal: \$2,795.92

**Total: \$2,795.92**

Supervisor Signature:



Client Signature:





# Daily Field Ticket

19170-016-0263

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
TOM OSO  
403 946 0066  
www.boomltd.ca

CUSTOMER: Green Fire Oil & Gas

LOCATION: 13-26-084-11 W4M

JOB DESCRIPTION: 8" Spool

DATE: 2019/10/25

PO: 201587

JOB NO: 19170

ACTIVITIES: load spool and haul to Calgary for PWHT

## LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Zac Dunhame	3rd Year Apprentice	<input type="checkbox"/>	4	\$55.14					\$220.56

Subtotal Labour: **\$220.56**

## EQUIPMENT

Equipment	Qty	Rate Type	Rate	Total
Pickup & Trailer	4	Hourly	\$61.20	\$244.80

Subtotal Equipment: **\$244.80**

Total Labour: \$220.56

Total Equipment: \$244.80

Subtotal: \$465.36

**Total: \$465.36**

Supervisor Signature:



Client Signature:





# Daily Field Ticket

19170-016-0264

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca

CUSTOMER: Green Fire Oil & Gas

LOCATION: 13-26-084-11 W4M

JOB DESCRIPTION: 8" Spool

DATE: 2019/10/29

PO: 201587

JOB NO: 19170

ACTIVITIES: travel to Calgary pick up spool return to shop and hydro test spool

## LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Danial Babchuk	Journeyman	<input type="checkbox"/>	7	\$58.71					\$410.97
Scott Patterson	QA/QC Manager	<input type="checkbox"/>	5	\$82.18					\$410.90

Subtotal Labour: **\$821.87**

## EQUIPMENT

Equipment	Qty	Rate Type	Rate	Total
Pickup - Crew Cab 4WD 1 Ton	1	Hourly	\$30.00	\$30.00

Subtotal Equipment: **\$30.00**

Total Labour: **\$821.87**

Total Equipment: **\$30.00**

Subtotal: **\$851.87**

**Total: \$851.87**

Supervisor Signature:

Client Signature:



# Daily Field Ticket

19170-016-0265

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
TOM OSO  
403.946.0066  
www.boomltd.ca

**CUSTOMER:** Green Fire Oil & Gas  
**LOCATION:** 13-26-084-11 W4M  
**JOB DESCRIPTION:** 8" Spool

**DATE:** 2019/10/31  
**PO:** 201587  
**JOB NO:** 19170

**ACTIVITIES:** load up spool and deliver to site and return to shop

## LABOUR

Worker Name	Trade	LOA	REG Hrs	Rate	OT Hrs	Rate	TT Hrs	Rate	Total
Freddy Smith	Truck Driver	<input type="checkbox"/>	1	\$49.50			14	\$49.50	\$742.50
Scott Patterson	QA/QC Manager	<input type="checkbox"/>	6	\$82.18					\$493.08
Danial Babchuk	Journeyman	<input type="checkbox"/>	2	\$58.71					\$117.42

**Subtotal Labour:** **\$1,353.00**

## EQUIPMENT

Equipment	Qty	Rate Type	Rate	Total
Pickup & Trailer	14	Hourly	\$61.20	\$856.80

**Subtotal Equipment:** **\$856.80**

## MISC

Description	Qty	Rate Type	Rate	Upcharge (%)	Rate (marked-up)	Total
NDE	1	Each	\$1,168.50	10	\$1,285.35	\$1,285.35

**Subtotal Misc:** **\$1,285.35**

## THIRD PARTY

Description	Qty	Rate Type	Rate	Upcharge (%)	Rate (marked-up)	Total
Outkast INV#102734	1	Each	\$2,688.68	0%	\$2,688.68	\$2,688.68
Outkast	1	Each	\$511.06	10%	\$562.17	\$562.17

**Subtotal Third Party:** **\$3,250.85**

Total Labour: \$1,353.00  
Total Equipment: \$856.80  
Total Misc: \$1,285.35  
Total Third Party: \$3,250.85  
Subtotal: \$6,746.00

**Total: \$6,746.00**

**Supervisor Signature:**

**Client Signature:**



# Daily Field Ticket

19170-016-0265

Boom Construction Ltd.  
42A McCool Crescent Crossfield AB  
T0M 0S0  
403.946.0066  
www.boomltd.ca



Box 636  
Sundre, Alberta T0M 1X0  
Ph: 403-638-3941  
Fax: 403-638-3944  
email: outcast@telus.net

## INVOICE

Invoice No.: 102743  
Date: 10/23/2019  
Ship Date:  
Page: 1  
Re: Order No.

### Sold to:

Boom Construction  
PO Box 1379  
Crossfield, Alberta T0M 0S0

### Ship to:

Boom Construction  
PO Box 1379  
Crossfield, Alberta T0M 0S0  
KYLE SCOTT  
19170-001

Business No.: 132364464RP0001

Quantity	Unit	Description	Tax	Base Price	Disc. %	Unit Price	Amount
1	Each	2"150 RF RP Floating Ball Valve WCB DHV	G	310.88		310.88	310.88
1	Each	4"150 RF Hub Blind Flange A105N c/w 2" NPT	G	189.80	15.00	161.33	161.33
4	FL	Flat Iron 1/4x6	G	5.15	15.00	4.38	17.52
1	Each	4"150 316 Inner Ring Gasket	G	10.20	15.00	8.67	8.67
8	Each	5/8x3.5 B7M Studs	G	0.95	15.00	0.81	6.48
16	Each	5/8" 2HM Nuts	G	0.45	15.00	0.38	6.08
Subtotal:							511.06
G - GST 5% GST							25.55
Outcast Offfield Supplies Inc. GST: #R132364464							
Shipped By: Tracking Number:				Total Amount		536.61	
Comment: Terms: Net 30 Days				Amount Paid		0.00	
Sold By:				Amount Owning		536.61	



This is Exhibit "B" referred to in the Affidavit of  
Ryan Morse, sworn before me this  
6th day of May, 2021.



A Commissioner for Oaths in and for the  
Province of Alberta

**ELISABETH J. STEWART**  
Barrister & Solicitor

Form 2  
(Sections 34 and 36)

Statement of Lien Upon Interest in Crown Minerals

This statement of lien applies in respect of the following (check the appropriate box):

To work done or materials furnished in respect of improvements, other than improvements to an oil or gas well or to an oil or gas well site, in which case this lien is to be registered with the Minister of Energy not later than 45 days from the last day that the work was last done or the materials were last furnished.

To work done or materials furnished in respect of improvements to an oil and gas well or to an oil or gas well site in which case this lien is to be registered with the Minister of Energy not later than 90 days from the last day that the work was done or the materials were last furnished.

BOOM CONSTRUCTION LTD. of 400, 444 - 7 AVENUE SW, CALGARY ALBERTA T2P 0X8, claims a lien under the Builders' Lien Act upon the interest in minerals of

Owner: GREENFIRE HANGINGSTONE OPERATING CORPORATION  
Address: 444 5 AVENUE SW SUITE 1650  
CALGARY AB T2P 2T8

in the following land:

Agreement Type/Number	Land
072 728201AT70	All Lands

The mineral is oil sands and petroleum.

The lien is claimed in respect of the following work or materials, that is to say: supply and delivery of labour, equipment, materials and services related to construction of an improvement to an oil and gas well and wellsite, which work was or is to be done for or which materials were or are to be furnished for GREENFIRE HANGINGSTONE OPERATING CORPORATION AND GREENFIRE OIL & GAS LTD., 4000, 421 7 AVENUE SW, CALGARY AB T2P 4K9

The work was completed or the materials were last furnished on the 11 day of March, 2020

The sum claimed as due or to become due is \$304,825.35

The address for service of the lienholder hereunder is  
BOOM CONSTRUCTION LTD.  
C/O ROSE LLP ATTN COURTNEY KACHUR  
333 5 AVE SW SUITE 810  
CALGARY AB T2P 3B6  
in the Province of Alberta

Dated at CALGARY this 27<sup>TH</sup> day of MARCH, 2020



Boom Construction Ltd. Ryan Morse, Vice President, Lienholder (Signature)

VICE PRESIDENT FOR THE LIENHOLDER, BOOM CONSTRUCTION LTD.

(Status of signatory, eg lienholder, agent of lienholder, or where the lienholder or agent is a corporation, the signatory's position with the corporation)

Form 3  
(Sections 34(6))

Affidavit Verifying Claim

I \_\_\_\_\_ of \_\_\_\_\_  
(name of lienholder) (address of lienholder)  
in the Province of \_\_\_\_\_, (occupation)

named in the above (or annexed) statement make oath and say that the said claim is true.

Sworn before me at the \_\_\_\_\_ of \_\_\_\_\_  
in the Province of \_\_\_\_\_, this \_\_\_\_\_  
day of \_\_\_\_\_.

Signature

A Commissioner for oaths in and for the Province of  
Alberta

Printed or stamped name of Commissioner for Oaths and  
date on which appointment expires

Form 4  
(Sections 34(6) and (7))

Affidavit Verifying Claim by Other Than Lienholder

I RYAN MORSE of CALGARY  
(name of deponent) (address of deponent)  
in the Province of ALBERTA, VICE PRESIDENT, BOOM CONSTRUCTION LTD.  
(occupation)

make oath and say:

- (1) That I am the agent (or assignee) of BOOM CONSTRUCTION LTD. named in the above (or annexed) statement and have full knowledge of the facts set forth in the above (or annexed) statement  
[Or I am informed by N/A  
(source of information)]  
and believe that the facts are as set forth in the above (or annexed) statement]

- (2) That the said claim is true (or when deponent has been informed, That I believe that the said claim is true).

Sworn before me at the CITY of \_\_\_\_\_  
CALGARY,  
in the Province of ALBERTA, this \_\_\_\_\_  
27TH day of \_\_\_\_\_  
MARCH, 2020.

Signature

C. Kachur  
A Commissioner for oaths in and for the Province of  
Alberta

COURTNEY KACHUR  
Barrister & Solicitor  
Printed or stamped name of Commissioner for Oaths and  
date on which appointment expires

This is Exhibit "C" referred to in the Affidavit of  
Ryan Morse, sworn before me this  
6th day of May, 2021.



A Commissioner for Oaths in and for the  
Province of Alberta

**ELISABETH J. STEWART**  
Barrister & Solicitor





**Alvarez & Marsal Canada Inc.**  
Bow Valley Square 4  
Suite 1110, 250 - 6th Avenue SW  
Calgary, Alberta T2P 3H7  
Phone: +1 403 538 7555  
Fax: +1 403 538 7551

### **Notice to Claimants (Secured Claims Procedure)**

On October 8, 2020, Greenfire Oil and Gas Ltd. (“**GOGL**”) and Greenfire Hangingstone Operating Corporation (“**OpCo**” and, together with GOGL, collectively, the “**Company**”), each filed Notices of Intention to Make a Proposal (the “**NOIs**”) pursuant to section 50.4(1) of the Bankruptcy and Insolvency Act (the “**BIA**”) and Alvarez and Marsal Canada Inc. (“**Proposal Trustee**”) was named as the Proposal Trustee.

On December 18, 2020, the Court approved a transaction whereby the property of the OpCo was sold. As part of the purchase price of the transaction, the Company will retain a cash pool (the “**Secured Creditor Cash Pool**”) to effect a distribution to affected secured creditors of OpCo.

On March 12, 2021, the Court granted an order (the “**Secured Claims Procedure Order**”) directing the Proposal Trustee to solicit Proofs of Secured Claim from secured creditors of OpCo for the purpose of determining the secured claims which will be entitled to claim a distribution from the estate of OpCo, being the Secured Creditor Cash Pool.

Any creditor having a Secured Claim (as defined in the Secured Claims Procedure Order) arising against OpCo before October 8, 2020 is required to file, in the manner set out in this Notice to Claimants, a Proof of Secured Claim in the prescribed form (which has been provided to you with this Notice to Claimants) with the Proposal Trustee in order to participate in any distribution from the Secured Creditor Cash Pool.

**PLEASE NOTE THAT ANY CLAIMANT WITH AN UNSECURED CLAIM IS NOT REQUIRED TO SUBMIT A PROOF OF SECURED CLAIM IN THIS PROCESS IN RESPECT OF SUCH UNSECURED CLAIM AT THIS TIME.**

Additional copies of the prescribed Proof of Secured Claim form can be obtained by contacting the Proposal Trustee via telephone at (403) 538 - 7516 or via e-mail at [dmacrae@alvarezandmarsal.com](mailto:dmacrae@alvarezandmarsal.com) or it can be downloaded from the Proposal Trustee's website at: <https://www.alvarezandmarsal.com/greenfire> (located in the Secured Creditor Claims process link).

**All Proof of Secured Claim forms, together with the required supporting documentation, must be sent to Alvarez & Marsal Canada Inc. to the attention of Duncan MacRae by email ([dmacrae@alvarezandmarsal.com](mailto:dmacrae@alvarezandmarsal.com)), prepaid registered mail, personal delivery, or sent by courier to Bow Valley Square 4, Suite 1110, 250 6th Ave SW, Calgary, AB, T2P 3H7 on or before 5:00 pm Mountain Daylight Time on March 29, 2021 (“Secured Claims Bar Date”).**

**All Proof of Secured Claim forms received by the Proposal Trustee or, in the case of mailing, postmarked, after the Secured Claims Bar Date will, unless otherwise ordered by the Court, be forever extinguished, barred, and the Claimant will not receive any distributions from the Secured Creditor Cash Pool.**

**Any Unsecured Claims (as defined in the Secured Claims Procedure Order) received by the Proposal Trustee will not be accepted or disputed, nor will they be forever extinguished or barred.**



With respect to Secured Claims, the Proposal Trustee will in turn provide to the creditor a notice in writing as to whether their Claim is accepted or disputed in whole or in part, and indicating the reason for the dispute (the “**Notice of Disallowance**”).

Where a creditor objects to a Notice of Disallowance, the creditor shall appeal to the court pursuant to section 135(4) of the BIA within 30 days or otherwise seek an extension to appeal within 30 days. **A creditor that does not appeal a Notice of Disallowance issued by the Proposal Trustee within the prescribed period shall, unless otherwise ordered by the Court, be conclusively deemed to have accepted the assessment of its Claim as set out in such Notice of Disallowance.**

Dated March 12, 2021 in Calgary, Alberta.

**ALVAREZ & MARSAL CANADA INC.,**  
in its capacity as Proposal Trustee of  
Greenfire Oil and Gas Ltd. and Greenfire  
Hangingstone Operating Corporation  
and not in its personal or corporate capacity

Per: \_\_\_\_\_  
Orest Konowalchuk, LIT  
Senior Vice President

**FORM 31**  
**PROOF OF SECURED CLAIM**  
**(SECTIONS 50.1, 81.5, 81.6, SUBSECTIONS 65.2(4), 81.2(1), 81.3(8), 81.4(8),**  
**102(2), 124(2), 128(1), AND PARAGRAPHS 51(1)(E) AND 66.14(B) OF THE ACT)**

*All notices or correspondence regarding this claim must be forwarded to the following address:*

Alvarez & Marsal Canada Inc.  
Bow Valley Square 4  
Suite 1110, 250 6th Ave SW  
Calgary, AB T2P 3H7

Attention: Duncan MacRae  
Email: [dmacrae@alvarezandmarsal.com](mailto:dmacrae@alvarezandmarsal.com)  
Phone: (403) 538-7516

In the matter of the proposal of Greenfire Hangingstone Operating Corporation, of Calgary, Alberta and the claim of \_\_\_\_\_, creditor.

I, \_\_\_\_\_ (name of creditor or representative of the creditor), of \_\_\_\_\_ (city and province), do hereby certify:

(C) That I am a creditor of the above-named debtor (or that I am \_\_\_\_\_ (state position or title) of \_\_\_\_\_ (name of creditor or representative of the creditor)).

(D) That I have knowledge of all of the circumstances connected with the claim referred to below.

(E) That the debtor was, at the date of bankruptcy at the date of the notice of intention or of the proposal, namely the 8th day of October, 2020, and still is, indebted to the creditor in the sum of \$ \_\_\_\_\_, as specified in the statement of account (or affidavit) attached and marked Schedule "A," after deducting any counterclaims to which the debtor is entitled. (The attached statement of account or affidavit must specify the vouchers or other evidence in support of the claim.)

(F) Check and complete appropriate category

☐ (a) UNSECURED CLAIM OF \$ \_\_\_\_\_

*(Other than as a customer contemplated by Section 262 of the Act)*

That in respect of this debt, I do not hold any assets of the debtor as security and

*(Check appropriate description)*

☐ Regarding the amount of \$ \_\_\_\_\_, I claim a right to a priority under section 136 of the Act.

☐ Regarding the amount of \$ \_\_\_\_\_, I do not claim a right to a priority.

*(Set out on an attached sheet details to support priority claim)*

☐ (b) CLAIM OF LESSOR FOR DISCLAIMER OF A LEASE \$ \_\_\_\_\_

That I hereby make a claim under subsection 65.2(4) of the Act, particulars of which are as follows:

*(Give full particulars of the claim, including the calculations upon which the claim is based)* ☐

(c) SECURED CLAIM OF \$ \_\_\_\_\_

That in respect of this debt, I hold assets of the debtor valued at \$ \_\_\_\_\_ as security, particulars of which are as follows:

*(Give full particulars of the security, including the date on which the security was given and the value at which you assess the security, and attach a copy of the security documents)*

☐ (d) CLAIM BY FARMER, FISHERMAN OR AQUACULTURIST OF \$ \_\_\_\_\_

That I hereby make a claim under subsection 81.2(1) of the Act for the unpaid amount of \$ \_\_\_\_\_

*(Attach a copy of sales agreement and delivery receipts)*

☐ (e) CLAIM BY WAGE EARNER OF \$ \_\_\_\_\_

☐ That I hereby make a claim under subsection 81.3(8) of the Act in the amount of \$ \_\_\_\_\_

☐ That I hereby make a claim under subsection 81.4(8) of the Act in the amount of \$ \_\_\_\_\_

☐ (f) CLAIM BY EMPLOYEE FOR UNPAID AMOUNT REGARDING PENSION PLAN OF \$ \_\_\_\_\_

☐ That I hereby make a claim under subsection 81.5 of the Act in the amount of \$ \_\_\_\_\_

☐ That I hereby make a claim under subsection 81.6 of the Act in the amount of \$ \_\_\_\_\_

☐ (g) CLAIM AGAINST DIRECTOR \$ \_\_\_\_\_

*(To be completed when a proposal provides for the compromise of claims against directors)*

That I hereby make a claim under subsection 50(13) of the Act, particulars of which are as follows:

*(Give full particulars of the claim, including the calculations upon which the claim is based)*

☐ (h) CLAIM OF A CUSTOMER OF A BANKRUPT SECURITIES FIRM \$ \_\_\_\_\_

That I hereby make a claim as a customer for net equity as contemplated by section 262 of the Act, particulars of which are as follows:

*(Give full particulars of the claim, including the calculations upon which the claim is based)*

(G) That, to the best of my knowledge, I am (or the above-named creditor is) (or am not or is not) related to the debtor within the meaning of section 4 of the Act, and have (or has) (or have not or has not) dealt with the debtor in a non-arm's-length manner.

(H) That the following are the payments that I have received from, the credits that I have allowed to, and the transfers at undervalue within the meaning of subsection 2(1) of the Act that I have been privy to or a party to with the debtor within the three months (or, if the creditor and the debtor are related within the meaning of section 4 of the Act or were not dealing with each other at arm's length, within the 12 months) immediately before the date of the initial bankruptcy event within the meaning of subsection 2(1) of the Act: *(provide details of payments, credits and transfers at undervalue)*

(I) *(Applicable only in the case of the bankruptcy of an individual)*



☐ Whenever the trustee reviews the financial situation of a bankrupt to redetermine whether or not the bankrupt is required to make payments under section 68 of the Act, I request to be informed, pursuant to paragraph 68(4) of the Act, of the new fixed amount or of the fact that there is no longer surplus income.

☐ I request that a copy of the report filed by the trustee regarding the bankrupt's application for discharge pursuant to subsection 170(1) of the Act be sent to the above address.

Dated at \_\_\_\_\_, this \_\_\_\_ day of \_\_\_\_\_.

\_\_\_\_\_  
Witness

\_\_\_\_\_  
Creditor

Telephone No.: \_\_\_\_\_

Fax No.: \_\_\_\_\_

Email address: \_\_\_\_\_

NOTE: ON DECEMBER 18, 2020, THE COURT APPROVED A TRANSACTION WHEREBY THE PROPERTY OF THE ABOVE DEBTOR WAS SOLD. AS PART OF THE PURCHASE PRICE OF THE TRANSACTION, SUCH DEBTOR WILL RETAIN A CASH POOL (THE "**SECURED CREDITOR CASH POOL**") TO EFFECT A DISTRIBUTION TO AFFECTED SECURED CREDITORS OF SUCH DEBTOR.

ON MARCH 12, 2021, THE COURT GRANTED AN ORDER (THE "**SECURED CLAIMS PROCEDURE ORDER**") DIRECTING THE PROPOSAL TRUSTEE TO SOLICIT PROOFS OF SECURED CLAIMS FROM SECURED CREDITORS OF THE ABOVE DEBTOR FOR THE PURPOSE OF DETERMINING THE SECURED CLAIMS WHICH WILL BE ENTITLED TO CLAIM A DISTRIBUTION FROM SECURED CREDITOR CASH POOL. ANY PROOF OF SECURED CLAIM THAT IS NOT DELIVERED TO THE PROPOSAL TRUSTEE AT THE ADDRESS NOTED BY MARCH 29, 2021, WILL, UNLESS OTHERWISE ORDERED BY THE ALBERTA COURT OF QUEEN'S BENCH, BE BARRED PURSUANT TO THE SECURED CLAIMS PROCEDURE ORDER AND MAY NOT THEREAFTER BE ADVANCED AGAINST THE ABOVE DEBTOR.

NOTE: If an affidavit is attached, it must have been made before a person qualified to take affidavits.

WARNINGS: A trustee may, pursuant to subsection 128(3) of the Act, redeem a security on payment to the secured creditor of the debt or the value of the security as assessed, in a proof of security, by the secured creditor.

Subsection 201(1) of the Act provides severe penalties for making any false claim, proof, declaration or statement of account.

This is Exhibit "D" referred to in the Affidavit of  
Ryan Morse, sworn before me this  
6th day of May, 2021.



A Commissioner for Oaths in and for the  
Province of Alberta

**ELISABETH J. STEWART**  
Barrister & Solicitor

**FORM 31**  
**PROOF OF SECURED CLAIM**  
(SECTIONS 50.1, 81.5, 81.6, SUBSECTIONS 65.2(4), 81.2(1), 81.3(8), 81.4(8),  
102(2), 124(2), 128(1), AND PARAGRAPHS 51(1)(E) AND 66.14(B) OF THE ACT)

*All notices or correspondence regarding this claim must be forwarded to the following address:*

Alvarez & Marsal Canada Inc.  
Bow Valley Square 4  
Suite 1110, 250 6th Ave SW  
Calgary, AB T2P 3H7

Attention: Duncan MacRae  
Email: [dmacrae@alvarezandmarsal.com](mailto:dmacrae@alvarezandmarsal.com)

Phone: (403) 538-7516

In the matter of the proposal of Greenfire Hangingstone Operating Corporation, of Calgary, Alberta and the claim of **Boom Construction Ltd.**, creditor.

I, Ryan Morse (name of creditor or representative of the creditor), of  
Calgary, Alberta (city and province), do hereby certify:

(C) That I am a creditor of the above-named debtor (or that I am President (state position or title)  
of Boom Construction Ltd. (name of creditor or representative of the creditor)).

(D) That I have knowledge of all of the circumstances connected with the claim referred to below.

(E) That the debtor was, at the date of bankruptcy at the date of the notice of intention or of the proposal, namely the 8th day of October, 2020, and still is, indebted to the creditor in the sum of \$ 603,058.37, as specified in the statement of account (or affidavit) attached and marked Schedule "A," after deducting any counterclaims to which the debtor is entitled. (The attached statement of account or affidavit must specify the vouchers or other evidence in support of the claim.)

(F) Check and complete appropriate category

☒ (a) UNSECURED CLAIM OF \$                      \$198,233.02

*(Other than as a customer contemplated by Section 262 of the Act)*

That in respect of this debt, I do not hold any assets of the debtor as security and

*(Check appropriate description)*

☐ Regarding the amount of \$                     , I claim a right to a priority under section 136 of the Act.

☐ Regarding the amount of \$                     , I do not claim a right to a priority.

*(Set out on an attached sheet details to support priority claim)*

☐ (b) CLAIM OF LESSOR FOR DISCLAIMER OF A LEASE \$                     

That I hereby make a claim under subsection 65.2(4) of the Act, particulars of which are as follows:

*(Give full particulars of the claim, including the calculations upon which the claim is based)* ☐

(c) SECURED CLAIM OF \$ \$304,825.35

That in respect of this debt, I hold assets of the debtor valued at \$ \_\_\_\_\_ as security, particulars of which are as follows:

*(Give full particulars of the security, including the date on which the security was given and the value at which you assess the security, and attach a copy of the security documents)*

In respect of the said debt, the creditor's Claim is secured by the lien registered pursuant to the *Builders' Lien Act*, RSA 2000, c B-7 with the Minister of Energy on March 27, 2020 as Registration No. 2000801, as well as a Certificate of *Lis Pendens*, registered with the Minister of Energy on September 21, 2020 as Registration No. 2002259, in relation to the Statement of Claim filed by the creditor on September 17, 2020 in Court of Queen's Bench of Alberta Court File No. 2001-10993, as shown by the documents attached hereto and marked as Schedule "B".

☐ (d) CLAIM BY FARMER, FISHERMAN OR AQUACULTURIST OF \$ \_\_\_\_\_

That I hereby make a claim under subsection 81.2(1) of the Act for the unpaid amount of \$ \_\_\_\_\_

*(Attach a copy of sales agreement and delivery receipts)*

☐ (e) CLAIM BY WAGE EARNER OF \$ \_\_\_\_\_

☐ That I hereby make a claim under subsection 81.3(8) of the Act in the amount of \$ \_\_\_\_\_

☐ That I hereby make a claim under subsection 81.4(8) of the Act in the amount of \$ \_\_\_\_\_

☐ (f) CLAIM BY EMPLOYEE FOR UNPAID AMOUNT REGARDING PENSION PLAN OF \$ \_\_\_\_\_

☐ That I hereby make a claim under subsection 81.5 of the Act in the amount of \$ \_\_\_\_\_

☐ That I hereby make a claim under subsection 81.6 of the Act in the amount of \$ \_\_\_\_\_

☐ (g) CLAIM AGAINST DIRECTOR \$ \_\_\_\_\_

*(To be completed when a proposal provides for the compromise of claims against directors)*

That I hereby make a claim under subsection 50(13) of the Act, particulars of which are as follows:

*(Give full particulars of the claim, including the calculations upon which the claim is based)*

☐ (h) CLAIM OF A CUSTOMER OF A BANKRUPT SECURITIES FIRM \$ \_\_\_\_\_

That I hereby make a claim as a customer for net equity as contemplated by section 262 of the Act, particulars of which are as follows:

*(Give full particulars of the claim, including the calculations upon which the claim is based)*

(G) That, to the best of my knowledge, I am (or the above-named creditor is) (or am not or is not) related to the debtor within the meaning of section 4 of the Act, and have (or has) (or have not or has not) dealt with the debtor in a non-arm's-length manner.

(H) That the following are the payments that I have received from, the credits that I have allowed to, and the transfers at undervalue within the meaning of subsection 2(1) of the Act that I have been privy to or a party to with the debtor within the three months (or, if the creditor and the debtor are related within the meaning of section 4 of the Act or were not dealing with each other at arm's length, within the 12 months) immediately before the date of the initial bankruptcy event within the meaning of subsection 2(1) of the Act: *(provide details of payments, credits and transfers at undervalue)*

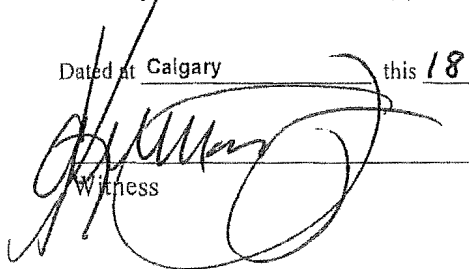
(N/A)

(I) *(Applicable only in the case of the bankruptcy of an individual)*



- ☐ Whenever the trustee reviews the financial situation of a bankrupt to redetermine whether or not the bankrupt is required to make payments under section 68 of the Act, I request to be informed, pursuant to paragraph 68(4) of the Act, of the new fixed amount or of the fact that there is no longer surplus income.
- ☐ I request that a copy of the report filed by the trustee regarding the bankrupt's application for discharge pursuant to subsection 170(1) of the Act be sent to the above address.

Dated at Calgary this 18 day of March, 2021.

  
Witness

  
Creditor

Telephone No.: (587) 355-4165

Fax No.: N/A

Email address: RMorse@boomltd.ca

**NOTE:** ON DECEMBER 18, 2020, THE COURT APPROVED A TRANSACTION WHEREBY THE PROPERTY OF THE ABOVE DEBTOR WAS SOLD. AS PART OF THE PURCHASE PRICE OF THE TRANSACTION, SUCH DEBTOR WILL RETAIN A CASH POOL (THE "**SECURED CREDITOR CASH POOL**") TO EFFECT A DISTRIBUTION TO AFFECTED SECURED CREDITORS OF SUCH DEBTOR.

ON MARCH 12, 2021, THE COURT GRANTED AN ORDER (THE "**SECURED CLAIMS PROCEDURE ORDER**") DIRECTING THE PROPOSAL TRUSTEE TO SOLICIT PROOFS OF SECURED CLAIMS FROM SECURED CREDITORS OF THE ABOVE DEBTOR FOR THE PURPOSE OF DETERMINING THE SECURED CLAIMS WHICH WILL BE ENTITLED TO CLAIM A DISTRIBUTION FROM SECURED CREDITOR CASH POOL. ANY PROOF OF SECURED CLAIM THAT IS NOT DELIVERED TO THE PROPOSAL TRUSTEE AT THE ADDRESS NOTED BY MARCH 29, 2021, WILL, UNLESS OTHERWISE ORDERED BY THE ALBERTA COURT OF QUEEN'S BENCH, BE BARRED PURSUANT TO THE SECURED CLAIMS PROCEDURE ORDER AND MAY NOT THEREAFTER BE ADVANCED AGAINST THE ABOVE DEBTOR.

**NOTE:** If an affidavit is attached, it must have been made before a person qualified to take affidavits.

**WARNINGS:** A trustee may, pursuant to subsection 128(3) of the Act, redeem a security on payment to the secured creditor of the debt or the value of the security as assessed, in a proof of security, by the secured creditor.

Subsection 201(1) of the Act provides severe penalties for making any false claim, proof, declaration or statement of account.

**Schedule A**

**Statement of Account of Pre-Filing Secured Claims  
of  
Boom Construction Ltd.  
owing from  
Greenfire Hangingstone Operating Corporation  
and  
Greenfire Oil & Gas Ltd.**

Invoice No.	Project	Date of Invoice	Amount of Invoice (\$)	Payments Made (\$)	Payment Date	Interest Owning as of August 12, 2020 (contractual interest at 2%) (\$)	Total Amount Owning (\$)
20180586	19145	2019-10-08	164,877.65	-	-	32,975.53	197,853.18
20180591	19145	2019-10-17	135,420.90	-	-	27,084.18	162,505.08
20180594	19146	2019-10-23	56,834.19	-	-	11,366.84	68,201.03
20180611	19138	2019-11-06	4,526.80	-	-	814.82	5,341.62
20180644	19190	2019-11-27	44,771.15	-	-	8,058.81	52,829.96
1129	20041	2020-04-01	91,706.75	87,339.76	2020-03-02	349.36	4,716.35
1054	20041	2020-04-02	79,252.55	79,252.55	2020-02-18	-	-
1034	20015	2020-03-11	9,091.02	747.45	2020-02-18	834.36	9,177.93
1130	2005	2020-08-12	2,433.23	-	-	(N/A)	2,433.23
20180582	19119	2019-10-08	42,881.27	42,881.27	2019-12-24	-	-
20180583	19119	2019-10-08	42,563.38	42,563.38	2020-01-10	-	-
20180587	19146	2019-10-08	47,467.74	47,467.74	2020-01-31	-	-
20180619	19170	2019-11-13	11,402.11	11,402.11	2019-12-24	-	-
<b>TOTAL:</b>							<b>503,058.37</b>

**Schedule B**

**Registered and Filed Documents Regarding Amounts Owing to  
Boom Construction Ltd.  
from  
Greenfire Hangingstone Operating Corporation  
and  
Greenfire Oil & Gas Ltd.**

*See attached.*

Form 2  
(Sections 34 and 36)

Statement of Lien Upon Interest in Crown Minerals

This statement of lien applies in respect of the following (check the appropriate box):

☐ To work done or materials furnished in respect of improvements, other than improvements to an oil or gas well or to an oil or gas well site, in which case this lien is to be registered with the Minister of Energy not later than 45 days from the last day that the work was last done or the materials were last furnished.

☒ To work done or materials furnished in respect of improvements to an oil and gas well or to an oil or gas well site in which case this lien is to be registered with the Minister of Energy not later than 90 days from the last day that the work was done or the materials were last furnished.

BOOM CONSTRUCTION LTD. of 400, 444 - 7 AVENUE SW, CALGARY ALBERTA T2P 0X8, claims a lien under the Builders' Lien Act upon the interest in minerals of

Owner: GREENFIRE HANGINGSTONE OPERATING CORPORATION  
Address: 444 5 AVENUE SW SUITE 1650  
CALGARY AB T2P 2T8

in the following land:

Agreement Type/Number Land  
072 728201 AT70 All Lands

The mineral is oil sands and petroleum.

The lien is claimed in respect of the following work or materials, that is to say: supply and delivery of labour, equipment, materials and services related to construction of an improvement to an oil and gas well and wellsite, which work was or is to be done for or which materials were or are to be furnished for GREENFIRE HANGINGSTONE OPERATING CORPORATION AND GREENFIRE OIL & GAS LTD., 4000, 421 7 AVENUE SW, CALGARY AB T2P 4K9

The work was completed or the materials were last furnished on the 11 day of March, 2020

The sum claimed as due or to become due is \$304,825.35

The address for service of the lienholder hereunder is  
BOOM CONSTRUCTION LTD.  
C/O ROSE LLP ATTN COURTNEY KACHUR  
333 5 AVE SW SUITE 810  
CALGARY AB T2P 3B6  
in the Province of Alberta

Dated at CALGARY this 27<sup>TH</sup> day of MARCH, 2020

  
Boom Construction Ltd. Ryan Morso, Vice President, Lienholder (Signature)

VICE PRESIDENT FOR THE LIENHOLDER, BOOM CONSTRUCTION LTD.  
(Name of signatory, or Lienholder, agent of lienholder or where the lienholder or agent is a corporation, the signatory's position with the corporation)



### Affidavit Verifying Claim

Printed or stamped name of Commissioner for Oaths and  
date on which appointment expires

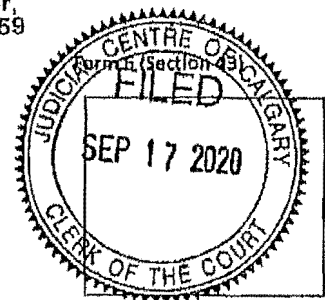
### Affidavit Verifying Claim by Other Than Lienholder

- (2) That the said claim is true (or when deponent has been informed, That I believe that the said claim is true).

Signature \_\_\_\_\_

Printed or stamped name of Commissioner for Oaths and  
date on which appointment expires

REGISTERED by the Minister of Energy  
this 21 day of September,  
2020 as Reg. No. 2002259



COURT FILE NUMBER: 2001- 10993  
COURT: COURT OF QUEEN'S BENCH OF ALBERTA  
JUDICIAL CENTRE: CALGARY  
PLAINTIFF: BOOM CONSTRUCTION LTD.  
DEFENDANTS: GREENFIRE HANGINGSTONE OPERATING CORPORATION and  
GREENFIRE OIL AND GAS LTD.  
DOCUMENT: CERTIFICATE OF *LIS PENDENS*  
ADDRESS FOR SERVICE AND CONTACT INFORMATION OF PARTY FILING THIS DOCUMENT: Rose LLP  
810, 333 - 5th Avenue S.W.  
Calgary, Alberta T2P 3B6  
Attention: Courtney C. Kachur  
Telephone: (403) 776-0527  
Facsimile: (403) 776-0501  
Email: Courtney.Kachur@RoseLLP.com  
File No.: 10684-003

TO: REGISTRAR OF LAND TITLES (OR THE MINISTER OF ENERGY)

This is to certify that proceedings have been taken in Court to enforce a certain lien registered by Boom Construction Ltd. against:

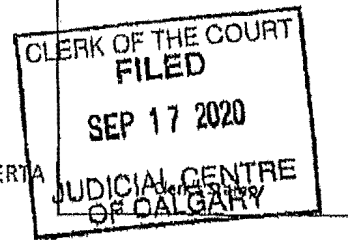
Lands described as: 13-26-084-11-W4  
Agreement Type/Number: 072 728201AT70  
Legally described as all lands  
The mineral is oil sands and petroleum

which lien was registered pursuant to the *Builders' Lien Act* in the Land Titles Office (or with the Minister of Energy) on the 27<sup>th</sup> day of March, 2020, respectively as No. 2000801, respectively.

Dated at the City of Calgary, in the Province of Alberta, this 17th day of September, 2020.

I hereby certify this to be a true copy of  
the original CLP  
dated this 17 day of Sept 2020  
[Signature]  
for Clerk of the Court

[Signature]  
Clerk of the Court



COURT FILE NUMBER 2001-(0993)  
 COURT COURT OF QUEEN'S BENCH OF ALBERTA  
 JUDICIAL CENTRE CALGARY  
 PLAINTIFF BOOM CONSTRUCTION LTD.  
 DEFENDANTS GREENFIRE HANGINGSTONE OPERATING CORPORATION and  
 GREENFIRE OIL & GAS LTD.  
 DOCUMENT STATEMENT OF CLAIM  
 ADDRESS FOR SERVICE AND CONTACT INFORMATION OF PARTY FILING THIS DOCUMENT  
 Rose LLP  
 810, 333 - 5th Avenue S.W.  
 Calgary, Alberta T2P 3B6  
 Telephone: (403) 776-0527  
 Attention: Courtney C. Kachur  
 File No.: 10684-003

NOTICE TO THE DEFENDANT: You are being sued. You are a Defendant. Go to the end of this document to see what you can do and when you must do it.

**Statement of facts relied on:**

1. The Plaintiff, Boom Construction Ltd. ("Boom"), is a body corporate incorporated in the Province of Alberta, with offices located in the City of Calgary. At all material times, Boom has operated as a construction services company throughout Western Canada.
2. The Defendant, Greenfire Oil & Gas Ltd., is a body corporate incorporated in the Province of Alberta, with offices located in the City of Calgary. At all material times, Greenfire carried on business as a Western Canadian oil and gas production company.
3. The Defendant, Greenfire Hangingstone Operating Corporation, is a body corporate incorporated in the Province of Alberta, with offices located in the City of Calgary. At all material times, Greenfire carried on business as an oil and gas production company for the Hangingstone Project located approximately 50 kilometers south of Fort McMurray, Alberta.
4. Greenfire Oil & Gas Ltd. and Greenfire Hanging Operating Corporation are collectively referred to herein as "Greenfire".

**The Agreement**

5. In or around August, 2019, Boom was engaged by Greenfire to supply and deliver certain labour, materials, services and equipment (the "Work") in connection with the construction of an improvement to an oil and gas well or well site under various purchase orders issued under a Master Service and Supply Agreement, dated July 2019 (collectively, the "Agreement").

6. The Agreement included a number of terms and conditions including:
- (a) Greenfire's obligation to pay the balance of each invoice within 45 days of receipt; and
  - (b) Boom's right to charge interest up to twelve percent per annum on late payments.

**Performance of the Work**

7. Between August 2019 and August 2020, Boom performed and completed the Work in a competent, proper, timely and professional manner in accordance with the Agreement, Greenfire's instructions and industry standards.
8. The Work was supplied to, performed on, and incorporated into an oil and gas well or well site legally described as 13-26-084-11-W4, and in respect of oil sands and petroleum lease number 072 728201AT70 (collectively the "Lands"), formed part thereof, and constituted an improvement to the same.
9. Greenfire requested, as defined by the *Builder's Lien Act*, R.S.A. 2000, c. B-7, as amended (the "*BLA*"), that Boom provide labour, materials, tools, equipment, manpower and services for the completion of the Work, and was at all times aware of, directed, authorized, acquiesced in and approved the Work as the same progressed and benefitted from the same.

**The Unpaid Invoices**

10. Boom issued 13 invoices in accordance with the Agreement, and in respect of the Work it performed on the Lands, to Greenfire. Of those 13 invoices, 8 remain unpaid, as set out below:

Invoice Number	Date	Amount	Paid
20180582	10/08/2019	\$42,881.27	Yes; in full.
20180583	10/08/2019	\$42,563.38	Yes; in full.
20180586	10/08/2019	\$164,877.65	No.
20180587	10/08/2019	\$47,467.74	Yes; in full.
20180591	10/17/2019	\$135,420.90	No.
20180594	10/23/2019	\$56,834.19	No.
20180611	11/06/2019	\$4,526.80	No.
20180619	11/13/2019	\$11,402.11	Yes; in full.
20180644	11/27/2019	\$44,771.15	No.
1034	03/11/2020	\$9,091.02	Partial; \$747.45 paid, \$8,343.57 outstanding.



1129	04/01/2020	\$91,706.75	Partial; \$87,339.76 paid, \$4,366.99 outstanding.
1054	04/02/2020	\$79,252.55	Yes; In full.
1130	08/12/2020	\$2,433.23	No.

(collectively, the "Invoices").

11. Greenfire received and approved each of the 13 Invoices.
12. The unpaid balance of the Invoices amounts to \$421,574.48, excluding contractual interest at a rate of 2% per month which equals \$81,483.90, for a totals \$503,058.37 (the "Outstanding Amount").
13. Despite and in breach of the express terms of the Agreement, and notwithstanding repeated demands, Greenfire has refused or otherwise failed to pay Boom for the Outstanding Amount owing in respect of the Work provided.

The Builders' Lien

14. On March 27, 2020, and in accordance with the requirements of the BLA, Boom filed a builders' lien with the Alberta Department of Energy, bearing registration number 2000801 in the amount of \$304,825.35, plus interest and costs, against the Lands (the "Lien").
15. At the time the Lien was registered, the Work was ongoing.
16. Boom states, and the fact is, that the Work was supplied in respect of improvements to the Lands and that such Work improved the Lands by at least \$421,574.48.
17. At all material times, Greenfire was the owner of the interest in the Lands, as defined in the BLA, and/or at whose request, express or implied, and on whose credit and behalf, with whose privity and consent, or for whose direct benefit the Work was supplied by Boom.
18. Boom pleads and relies upon the BLA, and any amendments thereto.

Claims Against Greenfire

19. Boom is entitled to a declaration that the Lien is valid pursuant to the provisions of the BLA.
20. In any event of the Lien, Boom claims the Outstanding Amount is a just debt due and owing to it by Greenfire, the payment of which has been wrongly withheld, in breach of the Agreement.
21. Further, or in the alternative, Boom provided the Work to Greenfire for and to the improvement of the subject Lands, with the complete and full knowledge, approval and direction of Greenfire, who has received the benefit and value of same, and Boom is entitled to the equitable relief of *quantum valebant* as against Greenfire.

22. Further, or in the alternative, in failing to pay the Outstanding Amount to Boom, Greenfire has been unjustly enriched to the corresponding deprivation of Boom in the amount of the Outstanding Amount. Boom states, and the fact is, that there is no justification, whether in law or in equity, for the neglect, failure or refusal of Greenfire to pay the Outstanding Amount. Boom further states, and the fact is, that it is entitled to be paid on a *quantum meruit* basis for supplying the Work to Greenfire.
23. To the extent Greenfire holds funds due to or owes monies to Boom, the same are subject to the statutory trust under section 22 of the *BLA* in favor of Boom, and it holds those monies as a trustee for Boom.
24. Further, Greenfire is a trustee of those sums pursuant to section 22 of the *BLA* or, in the alternative, pursuant to a constructive or resulting trust.
25. In the circumstances, an award of solicitor and its own client full indemnity costs is reasonable, just and proper.
26. Boom further claims a contractual service charge, according to the Invoices, at the rate of ten (10) percent per month on the entire Outstanding Amount (the "Service Charge").
27. Boom claims interest pursuant to the Agreement at the contractual rate of two (2) percent pre month.
28. In the alternative, Boom claims interest pursuant to the provisions of the *Judgment Interest Act*, RSA 2000, c J-1.

**Remedy Sought:**

29. Boom claims from Greenfire:
  - (a) Judgment in the amount of at least \$503,058.37, plus costs and the Service Charge;
  - (b) a Judgment, Declaration or Order that the Lien filed by Boom is valid and subsisting charges under the *BLA* upon the interests in the Lands herein described;
  - (c) in default of the payment of Boom's claim, together with interest allowed and the costs of this Action, that the interests in the Lands be sold pursuant to the mechanisms set out in the *BLA* and that the proceeds thereafter be applied in payment of Boom's claim as stated herein, or other claims against the said Lands in order of their priority;
  - (d) costs in favour of Boom on a solicitor-client basis, pursuant to the Invoices or Section 69 of the *BLA*, or, in the alternative, on a party-party basis;
  - (e) contractual interest at a rate of two (2) percent per month, or, in the alternative, interest pursuant to the *Judgment Interest Act*; and
  - (f) such further and other relief as this Honourable Court may deem just.

**NOTICE TO THE DEFENDANT**

You only have a short time to do something to defend yourself against this claim:

20 days if you are served in Alberta

1 month if you are served outside Alberta but in Canada

2 months if you are served outside Canada.

You can respond by filing a statement of defence or a demand for notice in the office of the clerk of the Court of Queen's Bench at Calgary, Alberta AND serving your statement of defence or a demand for notice on the address for service of the Plaintiff.

**WARNING**

If you do not file and serve a statement of defence or a demand for notice within your time period, you risk losing the law suit automatically. If you do not file, or do not serve, or are late in doing either of these things, a court may give a judgment to the Plaintiff against you.

This is Exhibit "E" referred to in the Affidavit of  
Ryan Morse, sworn before me this  
6th day of May, 2021.



A Commissioner for Oaths in and for the  
Province of Alberta

**ELISABETH J. STEWART**  
Barrister & Solicitor





**Alvarez & Marsal Canada Inc.**  
Bow Valley Square 4  
Suite 1110, 250 - 6th Avenue SW  
Calgary, Alberta T2P 3H7  
Phone: +1 403 538 7555  
Fax: +1 403 538 7551

April 16, 2021

Elisa Stewart  
Boom Construction Ltd. c/o Rose LLP  
2100 - 440 2 Avenue SW  
Calgary, AB T2P 5E9  
<Elisa.Stewart@rosellp.com>

Dear: Elisa Stewart

**RE: Notice of Disallowance of Secured Claim (Estate No. 25-2679073)**

**1. Receivership and Secured Claims Process**

On October 8, 2020, Greenfire Hangingstone Operating Corporation (the "**Corporation**") filed a Notice of Intention to Make a Proposal (the "**NOI**") pursuant to section 50.4(1) of the *Bankruptcy and Insolvency Act* (Canada), R.S.C. 1985, c. B-3 and Alvarez & Marsal Canada Inc. ("**A&M**") was appointed as Proposal Trustee of the Company. As part of the NOI proceedings, on March 12, 2021, the Court of Queen's Bench of Alberta (the "**Court**") granted an Order that established a process to determine all valid and outstanding secured claims ("**Secured Claims Process**") against the Corporation.

On the April 6, 2021, A&M was appointed the receiver ("**Receiver**") of the property of the Corporation by virtue of an Order granted by the Honorable Justice Graesser of the Court pursuant to section 13(2) of the *Judicature Act*, R.S.A. 2000, c.J-2 ("**Receivership Order**"). The Receivership Order authorized the Receiver to complete the Secured Claims Process.

**Claim Adjudication**

For the reasons set out in the enclosed notice, the Receiver has disallowed your claim in full. If you are dissatisfied with the disallowance, you may appeal to the Court within the 30-day period after the day on which this notice is served, or within any other period that the Court may, on application made on notice to the Receiver within the same 30-day period, allow.

**2. Bankruptcy and Unsecured Claims**

The NOI time-period expired on April 7, 2021 and the Corporation did not file a proposal. The Corporation was deemed to have made an assignment in bankruptcy on April 8, 2021 and A&M was appointed as licensed insolvency trustee ("**Trustee**") of the estate of the bankrupt by the official receiver; subject to affirmation by the creditors of the Trustee's appointment or substitution of another trustee by the creditors. The first meeting of creditors of the bankrupt will be held on April 23, 2021 at 9:30am MST. Due to the global COVID-19 pandemic, the first meeting of creditors will be held virtually. The teleconference details are as follows:

- Teleconference number: +1 (647) 749-7010 / Teleconference ID: 113 416 158

Each claimant that filed a Secured Proof of Claim in the Receivership Proceeding which was disallowed by the Receiver may file a proof of unsecured claim, and, where necessary, a proxy, with the Trustee before the meeting of creditors in order to be entitled to vote at the meeting of creditors.

Unsecured creditors must prove their claims against the estate of the bankrupt to share in any distribution of the proceeds to unsecured creditors, if any, realized from the estate. Enclosed with this package are a proof of claim form and a proxy form to be completed in respect of the bankruptcy.

Alvarez & Marsal Canada Inc. - Licensed Insolvency Trustee,  
in its capacity as Receiver of Greenfire Hangingstone Operating Corporation  
and not in its personal or corporate capacity

Per: 

Orest Konowalchuk, LIT  
Senior Vice President

Enclosure



District of        Alberta  
Division No.    02 - Calgary  
Court No.       25-2679073  
Estate No.      25-2679073

**Alvarez & Marsal Canada Inc.**  
Bow Valley Square 4  
Suite 1110, 250 - 6th Avenue SW  
Calgary, Alberta T2P 3H7  
Phone: +1 403 538 7555  
Fax: +1 403 538 7551

- FORM 77 -  
**Notice of Disallowance of Claim, Right to Priority or Security or  
Notice of Valuation of Claim  
(Subsection 135(3) of the Act)**

**TAKE NOTICE THAT:**

- A. as Receiver acting in the proceedings of Greenfire Hangingstone Operating Corporation ("**Greenfire Hangingstone**") in Court of Queen's Bench of Alberta (the "**Court**") Action No. 25-2679073, I have disallowed your secured claim in whole, pursuant to subsection 135(2) of the *Bankruptcy and Insolvency Act*, RSC 1985, c B-3, for the following reasons:

Boom's builders' lien registration no. 2000801 ("**Boom Builders' Lien**") was registered with Alberta Energy outside the 90 day prescribed period to register a builders' lien under section 41 of the *Builders' Lien Act*, RSA 2000, c B-7 (the "**BLA**").

Boom provided materials and work in respect of a facility turnaround (the "**Turnaround Work**"). Boom registered the Boom Builders' Lien for three invoices for the Turnaround Work respectively dated October 8, 2019, October 17, 2019, and November 6, 2019. Boom's Builders' Lien was registered with Alberta Energy on March 27, 2020.

Boom provided maintenance work on the project site to repair a truck loading arm in January, 2020, and prepared certain pipeline materials off site. Based on the information contained in the Proof of Claim and its discussions with representatives of Greenfire Hangingstone to date, it appears to the Receiver that this work was not a continuation of the Turnaround Work. In addition, maintenance work is generally not lienable under the BLA. The repair to the truck loading arm appears to be maintenance work.

And further take notice that if you are dissatisfied with my decision in disallowing your claim in whole or in part (or a right to rank or your security or valuation of your claim), you may appeal to the Court within the 30-day period after the day on which this notice is served, or within any other period that the Court may, on application made within the same 30-day period, allow.

Dated at the city of Calgary in the Province of Alberta, this 16<sup>th</sup> day of April 2021.

Alvarez & Marsal Canada Inc. - Licensed Insolvency Trustee,  
in its capacity as Receiver of Greenfire Hangingstone Operating Corporation  
and not in its personal or corporate capacity

Per: 

Orest Konowalchuk, LIT  
Senior Vice President

This is Exhibit "F" referred to in the Affidavit of  
Ryan Morse, sworn before me this  
6th day of May, 2021.



A Commissioner for Oaths in and for the  
Province of Alberta

**ELISABETH J. STEWART**  
Barrister & Solicitor

## Maria Steele

---

**From:** Bimpe Adeoye <badeoye@greenfireoilandgas.com>  
**Sent:** December 4, 2019 3:48 PM  
**To:** Kyle Scott  
**Cc:** Hany Mhanney; Brett Hiebert  
**Subject:** RE: Turnover packages

Hi Kyle,

For now, can you work on the turnover packages for the Pad 4 piping and FE-2020/2520 spools.

Received some updates from Hany and will revisit the MOC-105/truck out spools when we get more information. Thank you.

Best Regards,  
Bimpe

**From:** Bimpe Adeoye  
**Sent:** December 4, 2019 2:20 PM  
**To:** Kyle Scott <KScott@boomltd.ca>  
**Cc:** Hany Mhanney <hmhanney@greenfireoilandgas.com>; Brett Hiebert <BHiebert@boomltd.ca>  
**Subject:** RE: Turnover packages

Hello Kyle,

Following up on this request. Can you forward the hydrotest for both scopes.

Also, we have not received the turnover packages for the 4 spools received last week (Pad 4 piping spools and FE-2020/2520 Spools). Thank you

Best Regards,  
**Bimpe Adeoye**

**From:** Kyle Scott <KScott@boomltd.ca>  
**Sent:** November 26, 2019 10:20 AM  
**To:** Hany Mhanney <hmhanney@greenfireoilandgas.com>  
**Cc:** Bimpe Adeoye <badeoye@greenfireoilandgas.com>  
**Subject:** Re: Turnover packages

No problem I will look into this

Kyle Scott  
Superintendent  
403-304-9220  
Boom Construction

On Nov 26, 2019, at 10:12 AM, Hany Mhanney <hmhanney@greenfireoilandgas.com> wrote:



Hi Kyle,

I was reviewing the last turnover packages we got for MOC-105 and truck out spool and I am missing the hydrotest pressure record of both. Please check with your QA/QC team (I am not sure who is your current person) and send those when you can. Those should be in the form of pressure chart copies or photos for time and pressure gauge reading.

Thanks!

Regards,

Hany Mhanney, P.Eng.  
**Sr. Engineering Manager**  
**Greenfire Oil and Gas Ltd.**  
587.582.6377  
[hmhanney@greenfireoilandgas.com](mailto:hmhanney@greenfireoilandgas.com)  
<image001.jpg>

## Maria Steele

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**From:** Kyle Scott  
**Sent:** February 10, 2020 11:34 AM  
**To:** Darcy Kirton; Brett Hiebert  
**Subject:** Fwd: Greenfire Oil and Gas Ltd. - Pad 3 surface transfer pump install - Model Rev 4  
**Attachments:** image001.jpg; ATT00001.htm; BU-165-AREA-R4.nwd; ATT00002.htm

Darcy/ Brett

Darcy here is the conversation I had with you last week, Brett here is a fill in. If there are any questions feel free to contact me.

Kyle Scott  
Superintendent  
403-304-9220  
Boom Construction

Begin forwarded message:

**From:** Travis Shield <tshield@greenfireoilandgas.com>  
**Date:** February 10, 2020 at 10:47:03 AM MST  
**To:** Kyle Scott <KScott@boomltd.ca>  
**Subject:** Greenfire Oil and Gas Ltd. - Pad 3 surface transfer pump install - Model Rev 4

Hi Kyle,

As discussed late last week, we are wanting to sole source Boom Construction for the subject project. I'm still waiting on IFC mechanical drawings (should be complete this week) but I'll forward them to you once received. Once received, can you please review in detail, prepare and quote to supply material, shop fabrication labor and field install labor? So far my schedule has you guys starting to order material tomorrow...haha, so far we are not looking like we are going to hit that but I'm hoping we can make up time to prefab spools and be ready to hit the field for install come March 2<sup>nd</sup>. We'd also like to have a welder available to be onsite by Feb 27<sup>th</sup> to assist with pile install (I'm planning not to splice piles but would like a guy on stand-by just in case) and cut/cap when piling complete (between 26<sup>th</sup>-28<sup>th</sup>). From there we'd need the crew to mob out basically the next day to help cut the old pump building at pad 2 (that you guys installed last year) and cut it from the piles and assist Myshack with moving the building, welding it down to it's new piles, demolition of piping inside and start installing pre-fab spools, building pipe racks/cable tray supports, ect.

Please pencil us in your schedule for this time frame. Once we get the drawings you can quote, I'll create the PO and we'll set things in stone.

See attached model to give you an idea of the scope.

I'm sure you'll have lot's off questions, give me a shout anytime and once we get the drawings we should have a bunch of clarification at that point and we can go from there.

Thanks,

Travis Shield, P.Eng.

**Facilities Engineer**

**Greenfire Oil and Gas Ltd.**

587.834.8354 (cell)

[tshield@greenfireoilandgas.com](mailto:tshield@greenfireoilandgas.com)

## Maria Steele

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**From:** Travis Shield <tshield@greenfireoilandgas.com>  
**Sent:** February 14, 2020 4:14 PM  
**To:** Dave Tainsh; Russ Cox; Brett Hiebert; Kevin Huang  
**Subject:** Re: MOC-100 Phase 3 pump addition Issued for material take off.

Dave, can you please provide the pipeshow A14-A typical drawing to Boom (cc'd)?

Thanks,  
Travis

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**From:** Dave Tainsh <Dave.Tainsh@djaes.com>  
**Sent:** February 13, 2020 5:01 PM  
**To:** Travis Shield <tshield@greenfireoilandgas.com>  
**Subject:** FW: MOC-100 Phase 3 pump addition Issued for material take off.  
Travis I had to split this into 2 emails here's the first one

**From:** Dave Tainsh  
**Sent:** Thursday, February 13, 2020 4:42 PM  
**To:** 'Travis Shield' <tshield@greenfireoilandgas.com>  
**Cc:** Russ Cox <russ.cox@djaes.com>; Nick Rogers <nick.rogers@djaes.com>  
**Subject:** MOC-100 Phase 3 pump addition Issued for material take off.  
Hi Travis,

I've attached the ISO's, Line List and the model.

We feel they are 95%, if not better but we cannot IFC them until Stress and Civil have had a look at the design. Please review and let us know if you have any comments or concerns.

I will talk to you tomorrow

David Tainsh | Vice President, CET, Master Electrician/ Senior Electrical Designer

**35 YEARS**

EST. 1984

DJA ENGINEERING SERVICES INC.

[dave.tainsh@djaes.com](mailto:dave.tainsh@djaes.com) | T: 587-349-6950 | Cell: 403 880-6217 | Fax: 403 537-0158

<http://www.djaes.com> | 1400, 340 12 AVE SW, CALGARY AB T2R 1L5

## Maria Steele

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**From:** Jodi Boudreau <jboudreau@greenfireoilandgas.com>  
**Sent:** February 21, 2020 5:14 PM  
**To:** Brett Hiebert  
**Cc:** Albert Ma; Travis Shield  
**Subject:** Approved PO  
**Attachments:** 201948.pdf

Good afternoon Brett,

We have email approval from Kevin for this.

Jodi Boudreau



PO # 201948

Boom Construction LTD. Box 1739, 42A McCool Crescent Crossfield, AB, T0M 0S0 Attention: Kyle Scott Phone: 403-304-9220 Email: <a href="mailto:Kscott@boomltd.ca">Kscott@boomltd.ca</a> Quote# E-mail Feb 14	Site: Greenfire Hangingstone Operating Corporation	Date: 21-Feb-20
	Technical Contact Name: Albert Ma Phone: 587-601-5408 Email: <a href="mailto:AMa@greenfireoilandgas.com">AMa@greenfireoilandgas.com</a>	Commercial Contact Name: Jodi Boudreau Phone: 587-601-5480 Email: <a href="mailto:jboudreau@greenfireoilandgas.com">jboudreau@greenfireoilandgas.com</a>
		Payment Terms: 0
		Currency: CAD

Delivery Instructions	Purchase Order Notes	Billing Instructions
Incoterms: FCA Site Delivery Location: 13-26-084-11W4 Delivery Contact: Jodi Boudreau Phone: 587-601-5480	MSSA #: 100241 0	Send Invoice to: <a href="mailto:accountspayable@greenfireoilandgas.com">accountspayable@greenfireoilandgas.com</a> Invoices will be rejected if the correct PO# is not referenced

Description of Services and/or Goods:						
Line	Change Order	Description	Delivery Date	Quantity	Unit Price	Amount
1	0	Installation of New piping. It is assumed that no AWP is required or it can be provided by operations if needed. Camp and meal to be provided by Greenfire. It is assumed that installation can be completed in 3 days on T&M basis.	28-Feb-20	1	\$ 15,272.22	\$ 15,272.22
		8	9900	3045		
2	0	Purchase material and Fabricate Piping Spool and deliver to site w/ 10% of all butt welds to be 100% radiographed. Total 137 diameter inches pipe spool fabrication. Fabrication can be completed within 5 days of receiving PO	28-Feb-20	1	\$ 26,824.43	\$ 26,824.43
		8	9900	3045		
Base Order Total						\$ 42,096.65
Change Order Value						\$ -
Subtotal						\$ 42,096.65
Gst						\$ 2,104.83
Total						\$ 44,201.48

SELLER HAS READ AND AGREES TO BE BOUND BY THE PURCHASE ORDER INCLUDING GREENFIRE HANGINGSTONE OPERATING CORPORATION TERMS AND CONDITIONS. The Purchase Order shall become a binding agreement upon the Seller signing and returning a written acceptance of the Purchase Order or upon the Seller otherwise acknowledging acceptance of the Purchase Order or commencing performance of the Purchase Order, whichever occurs first. NOTWITHSTANDING THE FOREGOING, THE TERMS AND CONDITIONS OF ANY MASTER AGREEMENT SIGNED BY SELLER AND GREENFIRE HANGINGSTONE OPERATING CORPORATION SHALL TAKE PRECEDENCE OVER THE TERMS AND CONDITIONS OF THIS PURCHASE ORDER.

This Purchase Order is agreed under signature of the following representatives:

Greenfire Hangingstone Operating Corporation

Boom Construction LTD.

Approver Name: Kevin Millar

Approver Name:

Signature:

Signature:

Approval Date: 2020-02-21

Approval Date:

## Maria Steele

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**From:** Travis Shield <tshield@greenfireoilandgas.com>  
**Sent:** February 21, 2020 4:20 PM  
**To:** Brett Hiebert  
**Cc:** Matt Thomson; Darcy Kirton; Ryan Morse; Hangingstone Procurement  
**Subject:** RE: Boom Construction MOC-100 Pad 3 Proposal Quote 2020016

Thanks for getting this out to me, Brett. Since we have that other project for Albert (MOC 125), can you accept the pre-payment for this project on March 2<sup>nd</sup> and still move forward with both projects?

Let me know when you can. I'll get to work on the PO.

Thanks,

Travis Shield, P.Eng.  
Facilities Engineer  
Greenfire Oil and Gas Ltd.  
587.834.8354 (cell)  
587.315.5655 (office)  
[tshield@greenfireoilandgas.com](mailto:tshield@greenfireoilandgas.com)



**GREENFIRE**  
OIL AND GAS LTD.

**From:** Brett Hiebert <BHiebert@boomltd.ca>  
**Sent:** February 21, 2020 3:29 PM  
**To:** Travis Shield <tshield@greenfireoilandgas.com>  
**Cc:** Matt Thomson <MThomson@boomltd.ca>; Darcy Kirton <DKirton@boomltd.ca>; Ryan Morse <RMorse@boomltd.ca>; Hangingstone Procurement <hangingstoneprocurement@greenfireoilandgas.com>  
**Subject:** Boom Construction MOC-100 Pad 3 Proposal Quote 2020016

Good Afternoon Travis,

Please see the attached proposal documents for the fabriucation and installation of the Pad 3 piping scope.

Regards,



**Brett Hiebert**  
Project Manager  
Office: 403-946-0066  
Cell: 403-619-7111  
Email: [Bhiebert@boomltd.ca](mailto:Bhiebert@boomltd.ca) | [www.boomltd.ca](http://www.boomltd.ca)  
Box 1379, 42A McCool Crescent  
Crossfield Alberta T0M 0S0

## Maria Steele

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**From:** Kyle Scott  
**Sent:** February 24, 2020 3:19 PM  
**To:** Brett Hiebert  
**Subject:** Fwd: Dimension changes  
**Attachments:** image001.png; ATT00001.htm; DOC014.pdf; ATT00002.htm

Kyle Scott  
Superintendent  
403-304-9220  
Boom Construction

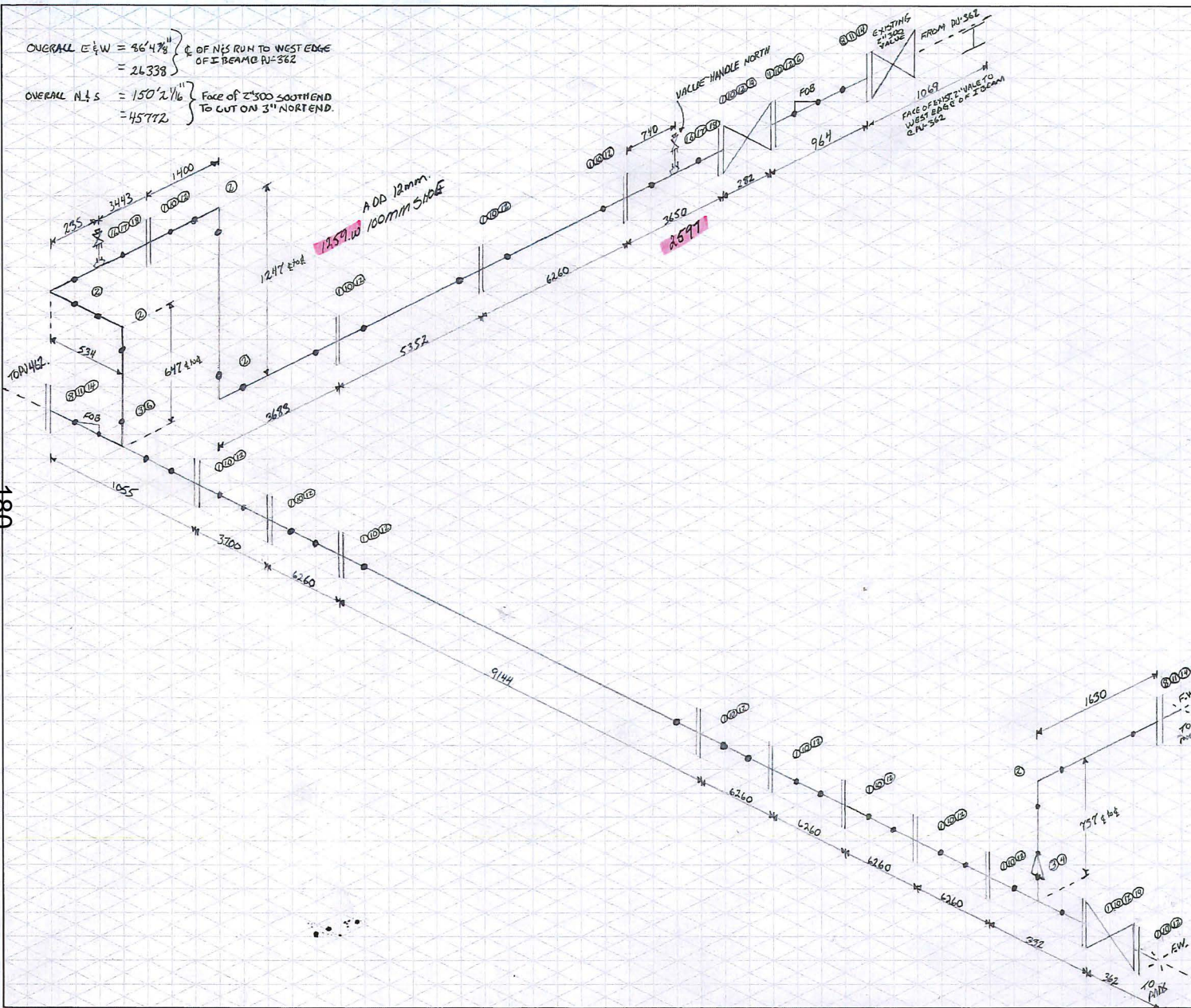
Begin forwarded message:

**From:** Jerry Hansen <jhansen@greenfireoilandgas.com>  
**Date:** February 24, 2020 at 3:15:55 PM MST  
**To:** Kyle Scott <KScott@boomltd.ca>  
**Cc:** Albert Ma <ama@greenfireoilandgas.com>  
**Subject:** Dimension changes

Kyle; Please ensure dimension changes are captured prior to fabrication, thanks.  
Jerry Hansen  
**Piping Lead | Greenfire Oil and Gas Ltd.**  
403.348.7635  
[jhansen@greenfireoilandgas.com](mailto:jhansen@greenfireoilandgas.com)

OVERALL E & W =  $86'4\frac{3}{8}"$  } OF N'S RUN TO WEST EDGE  
 = 26338 OF I BEAM @ RJ=362

OVERALL N & S =  $150'2\frac{1}{16}"$  } FACE OF 2" 300 SOUTH END  
 = 45772 TO CUT ON 3" NORTH END.



		NOTES:
		BA-PIPING SPEC REFER TO LDT TABLE FOR HYDRO & NDE REQS
MATERIAL		
ITEM	QTY.	DESCRIPTION
1	28	3" 300 RFWN SCH 40 A105N
2	4	3" 90° EL SCH 40 A 234 Gr. WPB
3	2	3" TEESCH 40 A 234 Gr WPB
4	1	3" x 2" SCH 40 3" K SCH 80 2" CONC. RED. A 234
5		Gr. WPB
6	2	3" x 2" SCH 40 3" x SCH 80 2" ECC. RED. A 134
7		Gr. WPB
8	4	2" 300 RFWN SCH 80 A105N
9	1	2" 90° EL SCH 80 A 234 Gr. WPB
10	128	STUD $\frac{3}{4}" \times \frac{1}{4}"$ A-193 B7 C/W A-194 2H NUTS
11	24	STUD $\frac{5}{8}" \times \frac{3}{16}"$ A-193 B7 C/W A-194 2H NUTS
12	16	GASKET RF FLEXITALLIC 3/16 SS WINDING C/W IR
13		3" 300 #
14	3	GASKET RF FLEXITALLIC 3/16 SS WINDING C/W IR
15		2" 300 #
16	2	$\frac{3}{4}"$ SOCKET 3000 # FES. A105N
17	2	$\frac{3}{4}" \times \frac{1}{4}"$ SCH 160 PRE SMLS A-106B NIPPLE
18	2	$\frac{3}{4}"$ GATE VALVE SML X THRD GASO 80
19	2	3" 300 # GATE VALVE GA-103D
20	70M	3" SCH 40 A-106 Gr. B SMLS PIPE
21	3M	2" SCH 80 A-106 Gr B SMLS PIPE
22	14	3" BOLT ON PIPE SHOE 102 TALL X 300 LONG
23		X 134 WIDE C/W 2 SLOTS FOR INSULATION
24		BANDING
25	1	3" BOLT ON PIPE SHOE 102 TALL X 600 LONG X 134 WIDE
26		C/W ANCHOR, 2 SLOTS FOR INSULATION, BANDING. SEE SHOE DETAILS



**GREENFIRE**  
OIL AND GAS LTD.



## Maria Steele

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**From:** Jodi Boudreau <[jboudreau@greenfireoilandgas.com](mailto:jboudreau@greenfireoilandgas.com)>  
**Sent:** February 26, 2020 10:01 AM  
**To:** Brett Hiebert  
**Cc:** Hangingstone Procurement; Travis Shield  
**Subject:** PO 201948  
**Attachments:** 201948.pdf

Good morning Brett,

I'm unsure if you have received this yet or not. Please see the attached PO for MOC-125.

Sincerely,

Jodi Boudreau  
SCM | Greenfire Oil and Gas Ltd.  
[jboudreau@greenfireoilandgas.com](mailto:jboudreau@greenfireoilandgas.com)  
Please "reply all" when responding



**GREENFIRE**  
OIL AND GAS LTD.

PO # 201948

Boom Construction LTD. Box 1739, 42A McCool Crescent Crossfield, AB, T0M 0S0 Attention: Kyle Scott Phone: 403-304-9220 Email: <a href="mailto:Kscott@boomltd.ca">Kscott@boomltd.ca</a> Quote# E-mail Feb 14	Site: Greenfire Hangingstone Operating Corporation	Date: 21-Feb-20
	Technical Contact Name: Albert Ma Phone: 587-601-5408 Email: <a href="mailto:AMa@greenfireoilandgas.com">AMa@greenfireoilandgas.com</a>	Commercial Contact Name: Jodi Boudreau Phone: 587-601-5480 Email: <a href="mailto:jboudreau@greenfireoilandgas.com">jboudreau@greenfireoilandgas.com</a>
		Payment Terms: 0
		Currency: CAD

Delivery Instructions	Purchase Order Notes	Billing Instructions
Incoterms: FCA Site Delivery Location: 13-26-084-11W4 Delivery Contact: Jodi Boudreau Phone: 587-601-5480	MSSA #: 100241 0	Send Invoice to: <a href="mailto:accountspayable@greenfireoilandgas.com">accountspayable@greenfireoilandgas.com</a> Invoices will be rejected if the correct PO# is not referenced

Description of Services and/or Goods:						
Line	Change Order	Description	Delivery Date	Quantity	Unit Price	Amount
1	0	Installation of New piping. It is assumed that no AWP is required or it can be provided by operations if needed. Camp and meal to be provided by Greenfire. It is assumed that installation can be completed in 3 days on T&M basis.	28-Feb-20	1	\$ 15,272.22	\$ 15,272.22
		8	9900	3045		
2	0	Purchase material and Fabricate Piping Spool and deliver to site w/ 10% of all butt welds to be 100% radiographed. Total 137 diameter inches pipe spool fabrication. Fabrication can be completed within 5 days of receiving PO	28-Feb-20	1	\$ 26,824.43	\$ 26,824.43
		8	9900	3045		
Base Order Total						\$ 42,096.65
Change Order Value						\$ -
Subtotal						\$ 42,096.65
Gst						\$ 2,104.83
Total						\$ 44,201.48

SELLER HAS READ AND AGREES TO BE BOUND BY THE PURCHASE ORDER INCLUDING GREENFIRE HANGINGSTONE OPERATING CORPORATION TERMS AND CONDITIONS. The Purchase Order shall become a binding agreement upon the Seller signing and returning a written acceptance of the Purchase Order or upon the Seller otherwise acknowledging acceptance of the Purchase Order or commencing performance of the Purchase Order, whichever occurs first. NOTWITHSTANDING THE FOREGOING, THE TERMS AND CONDITIONS OF ANY MASTER AGREEMENT SIGNED BY SELLER AND GREENFIRE HANGINGSTONE OPERATING CORPORATION SHALL TAKE PRECEDENCE OVER THE TERMS AND CONDITIONS OF THIS PURCHASE ORDER.

This Purchase Order is agreed under signature of the following representatives:

Greenfire Hangingstone Operating Corporation

Boom Construction LTD.

Approver Name: Kevin Millar

Approver Name:

Signature:

Signature:

Approval Date: 2020-02-21

Approval Date:

## Maria Steele

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**From:** Travis Shield <tshield@greenfireoilandgas.com>  
**Sent:** March 2, 2020 11:57 AM  
**To:** Brett Hiebert  
**Cc:** Lydia Kontuk  
**Subject:** RE: PO 201906 MOC - 100

Hi Lydia,

Just to confirm, Boom's welder's name is Travis Anderson.

Please book him a camp room for the week. Likely leaving Friday.

Thanks,

Travis Shield, P.Eng.  
**Facilities Engineer**  
**Greenfire Oil and Gas Ltd.**  
587.834.8354 (cell)  
587.315.5655 (office)  
[tshield@greenfireoilandgas.com](mailto:tshield@greenfireoilandgas.com)



**GREENFIRE**  
OIL AND GAS LTD.

**From:** Travis Shield  
**Sent:** February 27, 2020 2:32 PM  
**To:** Brett Hiebert <BHiebert@boomltd.ca>  
**Cc:** Lydia Kontuk <lkontuk@greenfireoilandgas.com>  
**Subject:** RE: PO 201906 MOC - 100

Hi Brett,

So we've got traction finally on the pile install. New dates are as follows, pile rig mobilize up Monday, March 2<sup>nd</sup> and start install Tuesday the 3<sup>rd</sup> and complete by end of day. Hoping you have a welder for stand by who can be there for the morning on Tuesday? If so please provide the name and Lydia will book him a camp room for Monday night.

It's unlikely that we will have to splice piles (but we will keep Murphy's law in mind) so I expect that the guy can just work on cutting existing pad 2 building from the piles all day Tuesday and then work behind the surveyors (who will mark elevations) all day Wednesday to cut and cap the piles in preparation for crane lift then move and set on the new piles at pad 3 on Thursday the 5<sup>th</sup>.

Let me know if that works for you?

Thanks,

Travis Shield, P.Eng.  
**Facilities Engineer**

Greenfire Oil and Gas Ltd.  
587.834.8354 (cell)  
587.315.5655 (office)  
[tshield@greenfireoilandgas.com](mailto:tshield@greenfireoilandgas.com)

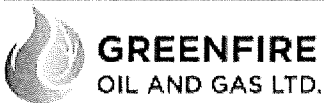


**From:** Travis Shield  
**Sent:** February 25, 2020 2:21 PM  
**To:** Brett Hiebert <[BHiebert@boomltd.ca](mailto:BHiebert@boomltd.ca)>  
**Cc:** Lydia Kontuk <[lkontuk@greenfireoilandgas.com](mailto:lkontuk@greenfireoilandgas.com)>  
**Subject:** RE: PO 201906 MOC - 100

Sorry Brett, as I mentioned, the welder will be required for Thursday noon for welder stand-by in case we have to splice piles which will be unlikely as I'm ordering 8" x 18m piles so more than likely he can just zip cut the existing building structure. Pile install should be completed Friday morning and then we'd like the welder to cut and cap the piles (hopefully finish up Friday but we should plan to possibly extend that into Saturday). See attached pile layout, schedule and notes for reference.

Thanks,

Travis Shield, P.Eng.  
Facilities Engineer  
Greenfire Oil and Gas Ltd.  
587.834.8354 (cell)  
587.315.5655 (office)  
[tshield@greenfireoilandgas.com](mailto:tshield@greenfireoilandgas.com)



**From:** Travis Shield  
**Sent:** February 25, 2020 1:51 PM  
**To:** Jodi Boudreau <[jboudreau@greenfireoilandgas.com](mailto:jboudreau@greenfireoilandgas.com)>; Brett Hiebert <[BHiebert@boomltd.ca](mailto:BHiebert@boomltd.ca)>  
**Cc:** Hangingstone Procurement <[hangingstoneprocurement@greenfireoilandgas.com](mailto:hangingstoneprocurement@greenfireoilandgas.com)>; Lydia Kontuk <[lkontuk@greenfireoilandgas.com](mailto:lkontuk@greenfireoilandgas.com)>  
**Subject:** RE: PO 201906 MOC - 100

Hey Brett,

As discussed could you please send up a welding for pile install welder stand-by and also zip cut the pump building skid stitch welds from the pile caps so we can lift the building on the Monday the 2<sup>nd</sup>?

When you find out please send me the guys name so we can book him a camp room.

Thanks,

Travis Shield, P.Eng.  
Facilities Engineer



**Greenfire Oil and Gas Ltd.**

587.834.8354 (cell)

587.315.5655 (office)

[tshield@greenfireoilandgas.com](mailto:tshield@greenfireoilandgas.com)



**GREENFIRE**  
OIL AND GAS LTD.

**From:** Jodi Boudreau <[jboudreau@greenfireoilandgas.com](mailto:jboudreau@greenfireoilandgas.com)>

**Sent:** February 24, 2020 2:56 PM

**To:** Brett Hiebert <[BHiebert@boomltd.ca](mailto:BHiebert@boomltd.ca)>

**Cc:** Hangingstone Procurement <[hangingstoneprocurement@greenfireoilandgas.com](mailto:hangingstoneprocurement@greenfireoilandgas.com)>; Travis Shield <[tshield@greenfireoilandgas.com](mailto:tshield@greenfireoilandgas.com)>

**Subject:** PO 201906 MOC - 100

Good afternoon Brett,

Please see the attached signed PO.

Sincerely,

Jodi Boudreau

SCM | Greenfire Oil and Gas Ltd.

[jboudreau@greenfireoilandgas.com](mailto:jboudreau@greenfireoilandgas.com)

Please "reply all" when responding



**GREENFIRE**  
OIL AND GAS LTD.

## Maria Steele

---

**From:** Travis Shield <tshield@greenfireoilandgas.com>  
**Sent:** February 27, 2020 2:32 PM  
**To:** Brett Hiebert  
**Cc:** Lydia Kontuk  
**Subject:** RE: PO 201906 MOC - 100

Hi Brett,

So we've got traction finally on the pile install. New dates are as follows, pile rig mobilize up Monday, March 2<sup>nd</sup> and start install Tuesday the 3<sup>rd</sup> and complete by end of day. Hoping you have a welder for stand by who can be there for the morning on Tuesday? If so please provide the name and Lydia will book him a camp room for Monday night.

It's unlikely that we will have to splice piles (but we will keep Murphy's law in mind) so I expect that the guy can just work on cutting existing pad 2 building from the piles all day Tuesday and then work behind the surveyors (who will mark elevations) all day Wednesday to cut and cap the piles in preparation for crane lift then move and set on the new piles at pad 3 on Thursday the 5<sup>th</sup>.

Let me know if that works for you?

Thanks,

Travis Shield, P.Eng.  
Facilities Engineer  
Greenfire Oil and Gas Ltd.  
587.834.8354 (cell)  
587.315.5655 (office)  
[tshield@greenfireoilandgas.com](mailto:tshield@greenfireoilandgas.com)



**GREENFIRE**  
OIL AND GAS LTD.

**From:** Travis Shield  
**Sent:** February 25, 2020 2:21 PM  
**To:** Brett Hiebert <BHiebert@boomltd.ca>  
**Cc:** Lydia Kontuk <lkontuk@greenfireoilandgas.com>  
**Subject:** RE: PO 201906 MOC - 100

Sorry Brett, as I mentioned, the welder will be required for Thursday noon for welder stand-by in case we have to splice piles which will be unlikely as I'm ordering 8" x 18m piles so more than likely he can just zip cut the existing building structure. Pile install should be completed Friday morning and then we'd like the welder to cut and cap the piles (hopefully finish up Friday but we should plan to possibly extend that into Saturday). See attached pile layout, schedule and notes for reference.

Thanks,

Travis Shield, P.Eng.  
Facilities Engineer

**Greenfire Oil and Gas Ltd.**  
587.834.8354 (cell)  
587.315.5655 (office)  
[tshield@greenfireoilandgas.com](mailto:tshield@greenfireoilandgas.com)



**From:** Travis Shield  
**Sent:** February 25, 2020 1:51 PM  
**To:** Jodi Boudreau <[jboudreau@greenfireoilandgas.com](mailto:jboudreau@greenfireoilandgas.com)>; Brett Hiebert <[BHiebert@boomltd.ca](mailto:BHiebert@boomltd.ca)>  
**Cc:** Hangingstone Procurement <[hangingstoneprocurement@greenfireoilandgas.com](mailto:hangingstoneprocurement@greenfireoilandgas.com)>; Lydia Kontuk <[lkontuk@greenfireoilandgas.com](mailto:lkontuk@greenfireoilandgas.com)>  
**Subject:** RE: PO 201906 MOC - 100

Hey Brett,

As discussed could you please send up a welding for pile install welder stand-by and also zip cut the pump building skid stitch welds from the pile caps so we can lift the building on the Monday the 2<sup>nd</sup>?

When you find out please send me the guys name so we can book him a camp room.

Thanks,

Travis Shield, P.Eng.  
**Facilities Engineer**  
**Greenfire Oil and Gas Ltd.**  
587.834.8354 (cell)  
587.315.5655 (office)  
[tshield@greenfireoilandgas.com](mailto:tshield@greenfireoilandgas.com)



**From:** Jodi Boudreau <[jboudreau@greenfireoilandgas.com](mailto:jboudreau@greenfireoilandgas.com)>  
**Sent:** February 24, 2020 2:56 PM  
**To:** Brett Hiebert <[BHiebert@boomltd.ca](mailto:BHiebert@boomltd.ca)>  
**Cc:** Hangingstone Procurement <[hangingstoneprocurement@greenfireoilandgas.com](mailto:hangingstoneprocurement@greenfireoilandgas.com)>; Travis Shield <[tshield@greenfireoilandgas.com](mailto:tshield@greenfireoilandgas.com)>  
**Subject:** PO 201906 MOC - 100

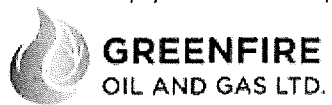
Good afternoon Brett,

Please see the attached signed PO.

Sincerely,

Jodi Boudreau  
**SCM | Greenfire Oil and Gas Ltd.**  
[jboudreau@greenfireoilandgas.com](mailto:jboudreau@greenfireoilandgas.com)

Please "reply all" when responding





## Maria Steele

---

**From:** Albert Ma <ama@greenfireoilandgas.com>  
**Sent:** February 28, 2020 11:19 AM  
**To:** Brett Hiebert; Kyle Scott  
**Subject:** MOC-125 - Pump Suction & Discharge ISOs  
**Attachments:** Min Flow over all and cut sheets.pdf; Suction piping over all and cut sheets.pdf; Discharge overall and cut sheets.pdf

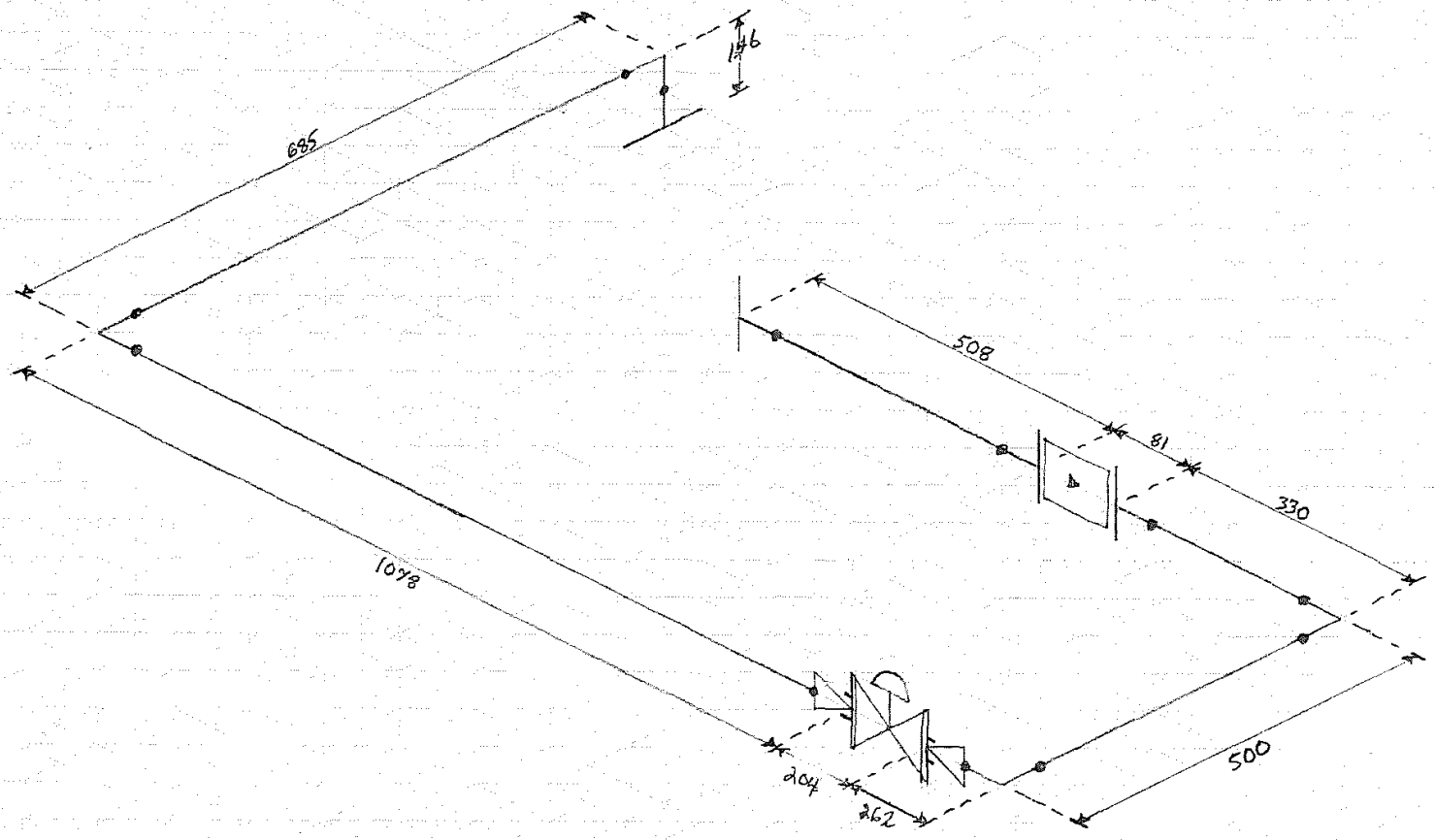
Hi Guys,

Please find attached the pump suction and discharge ISOs.

I will get the PO adjusted after I review your quote.

Thanks,  
Albert

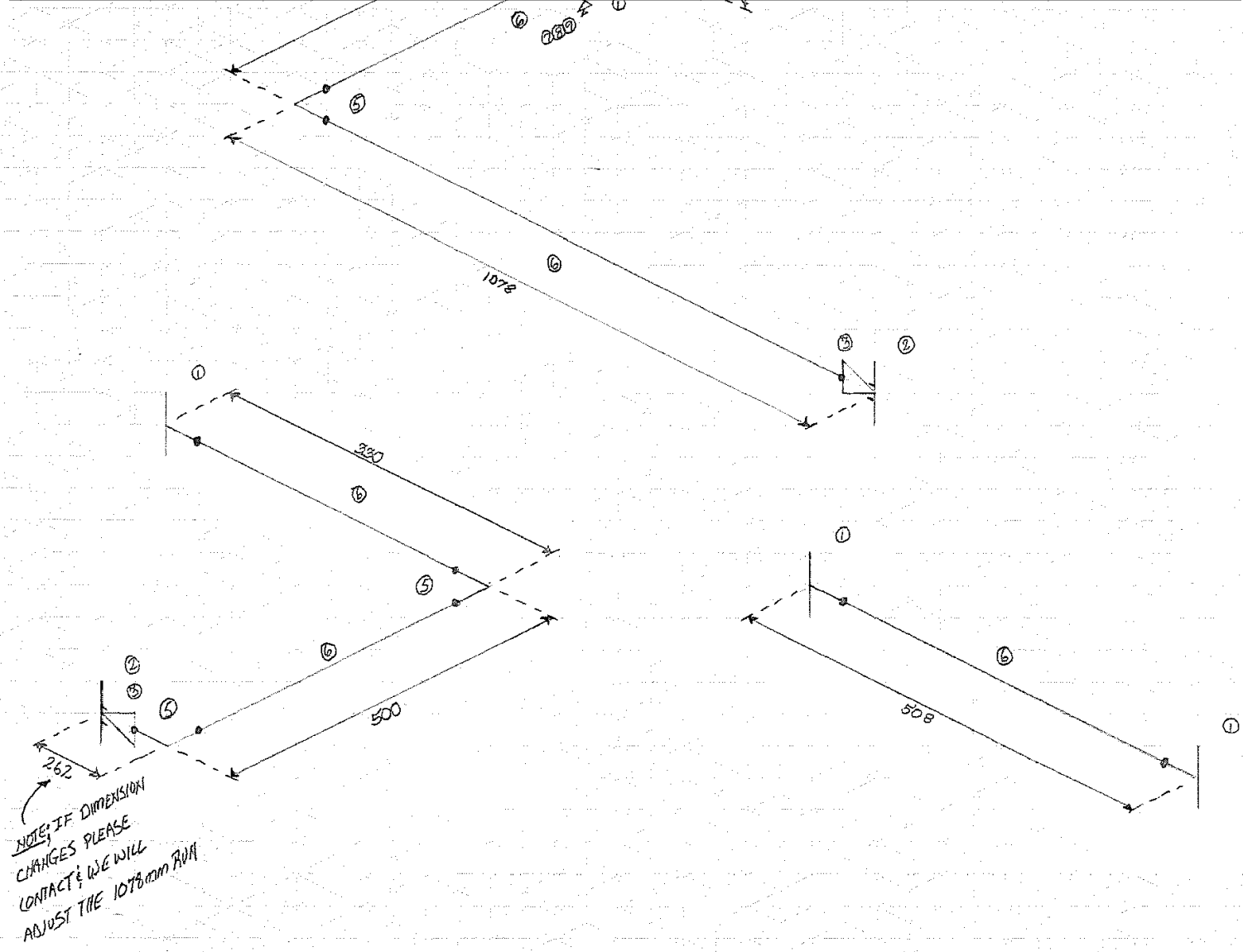
ITEM	QT
1	
2	
3	
4	
5	
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26	



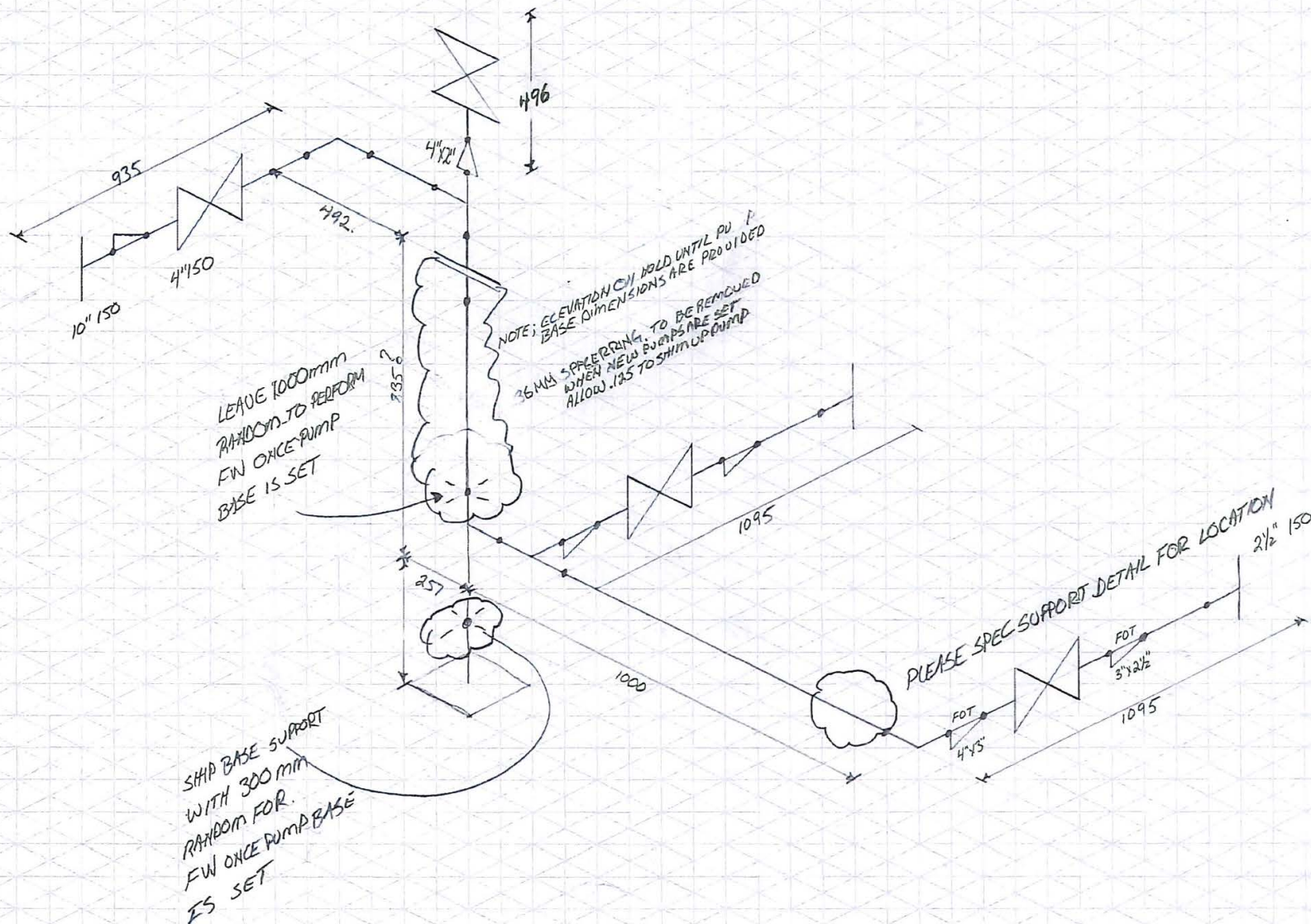
ITEM	Q
1	4
2	2
3	2
4	
5	4
6	3
7	1
8	1
9	1
10	1
11	
12	
13	
14	
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16	
17	
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21	
22	
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24	
25	
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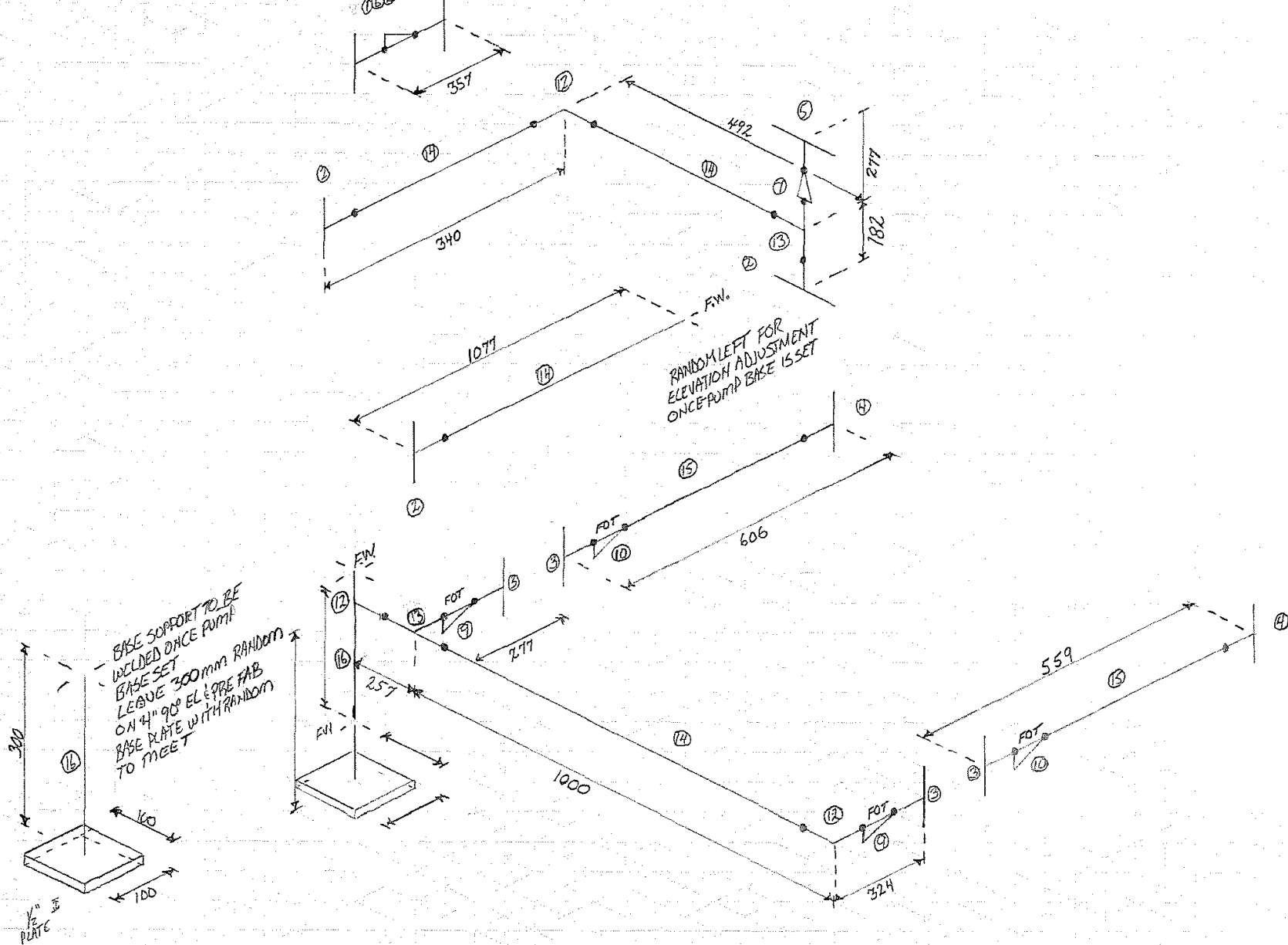


191



ITEM	Q
1	
2	
3	
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6	
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26	

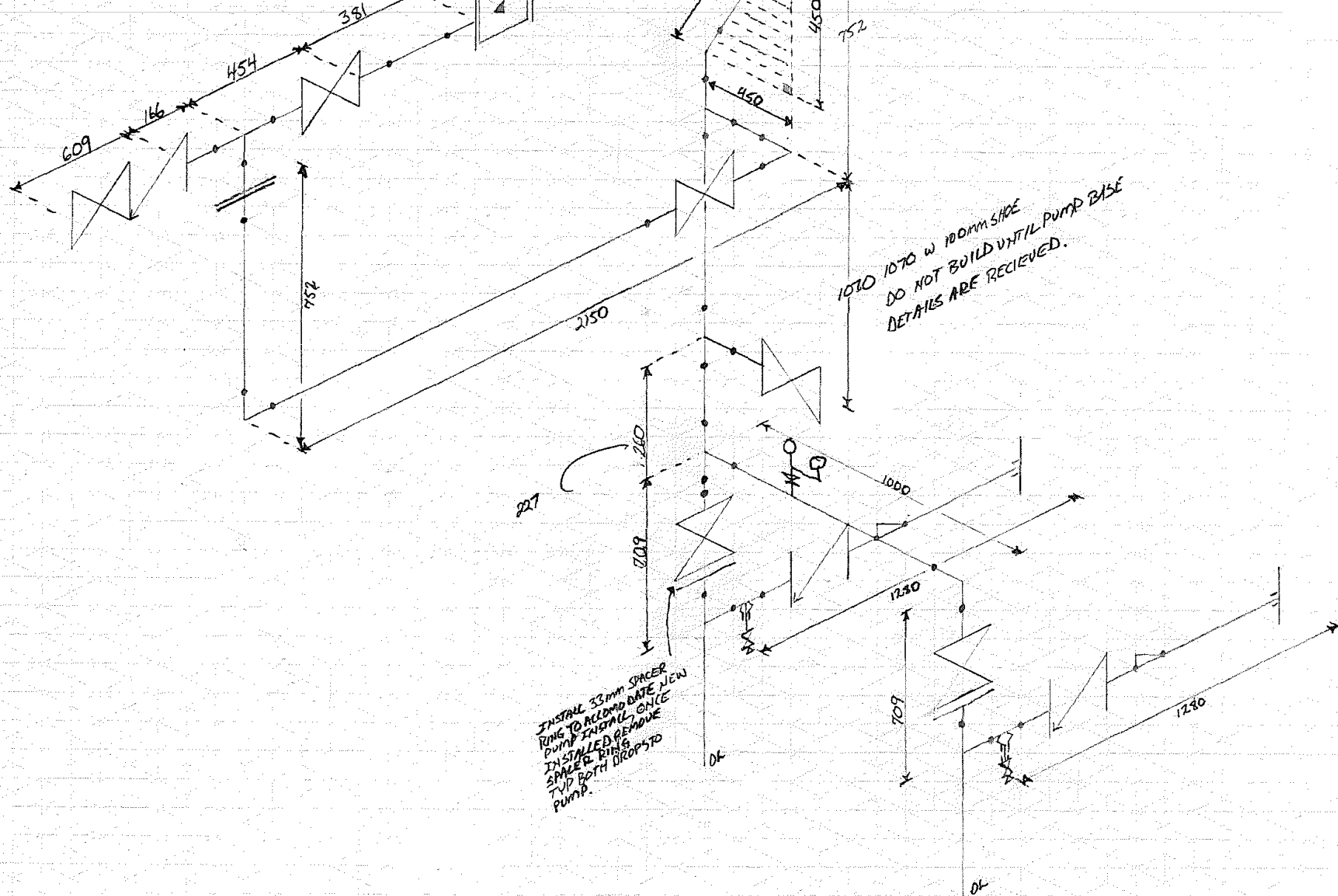




ITEM	QT
1	1
2	4
3	4
4	2
5	1
6	1
7	1
8	
9	2
10	2
11	
12	3
13	2
14	3M
15	1M
16	1M
17	
18	
19	
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21	
22	
23	
24	
25	
26	



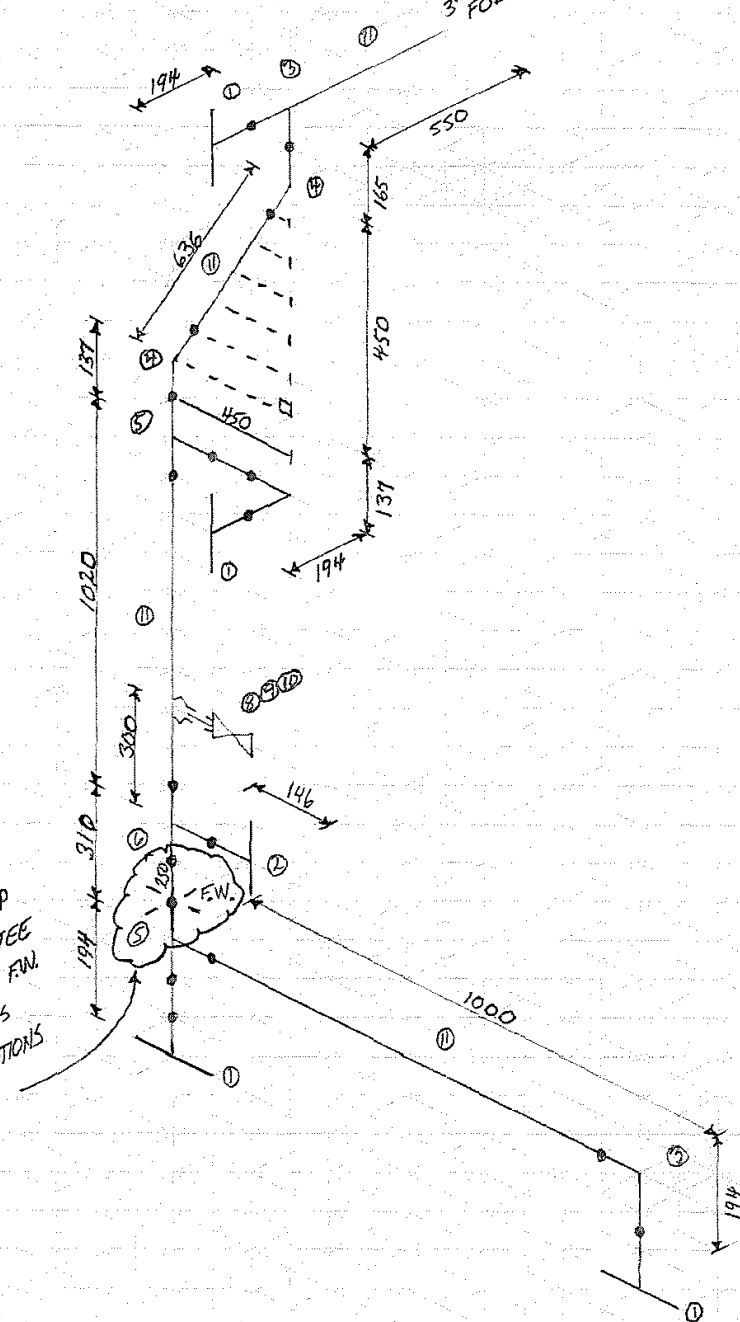




ITEM	QT
1	
2	
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26	



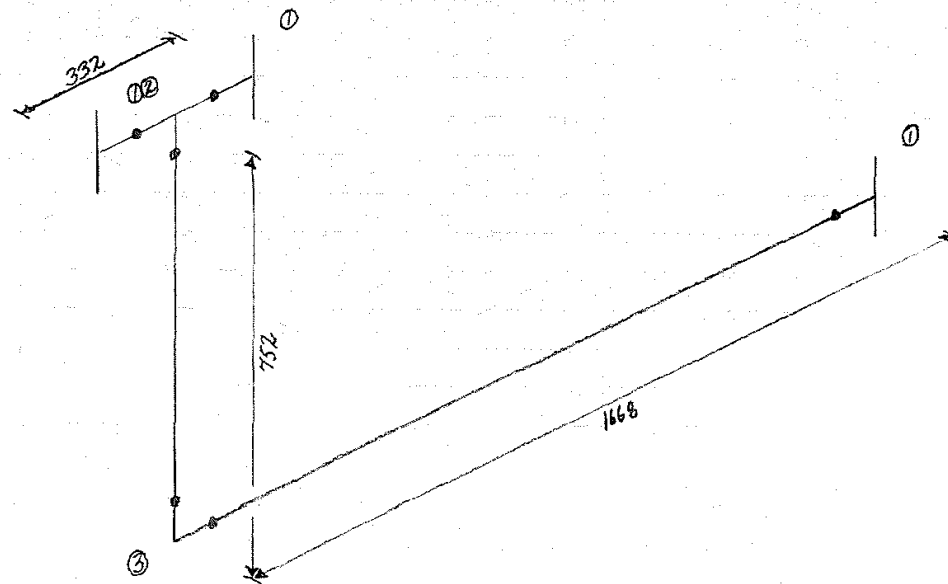
NOTE  
LEAVE 250MM POP  
RANDOM ON TOP TEE  
WE WILL COMPLETE FW  
ONCE PUMP BASE IS  
INSTALLED & ELEVATIONS  
ARE SHOT IN



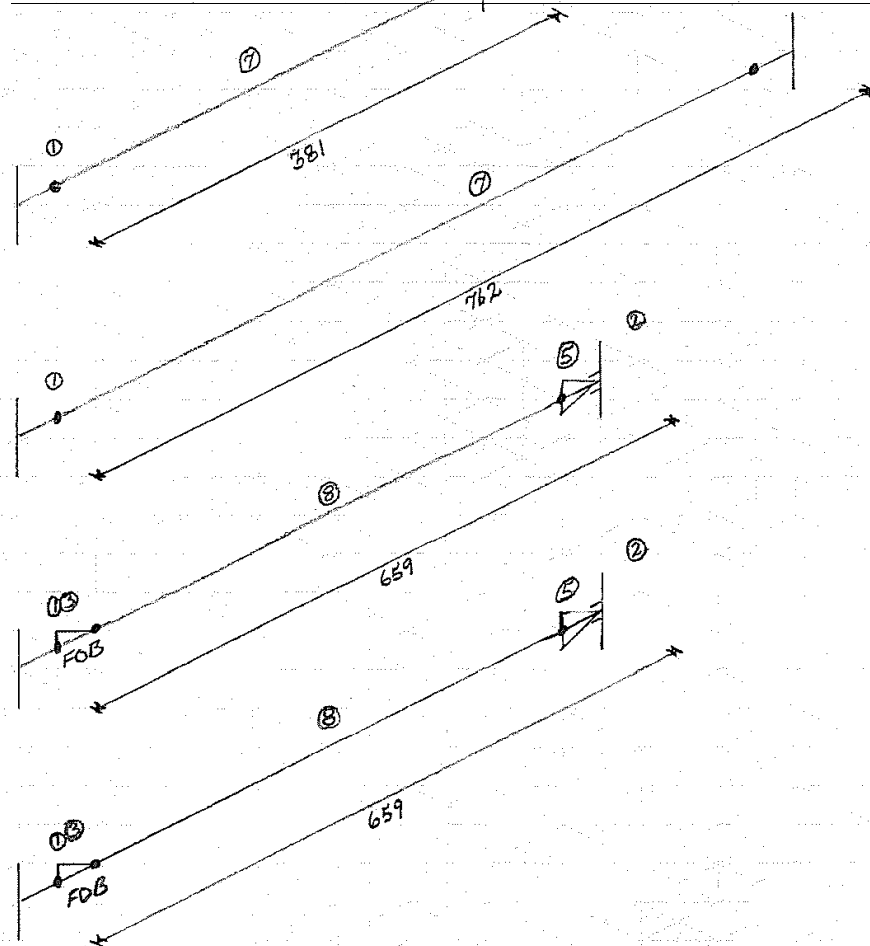
ITEM	QTY
1	4
2	1
3	3
4	2
5	2
6	1
7	
8	1
9	1
10	1
11	3M
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	

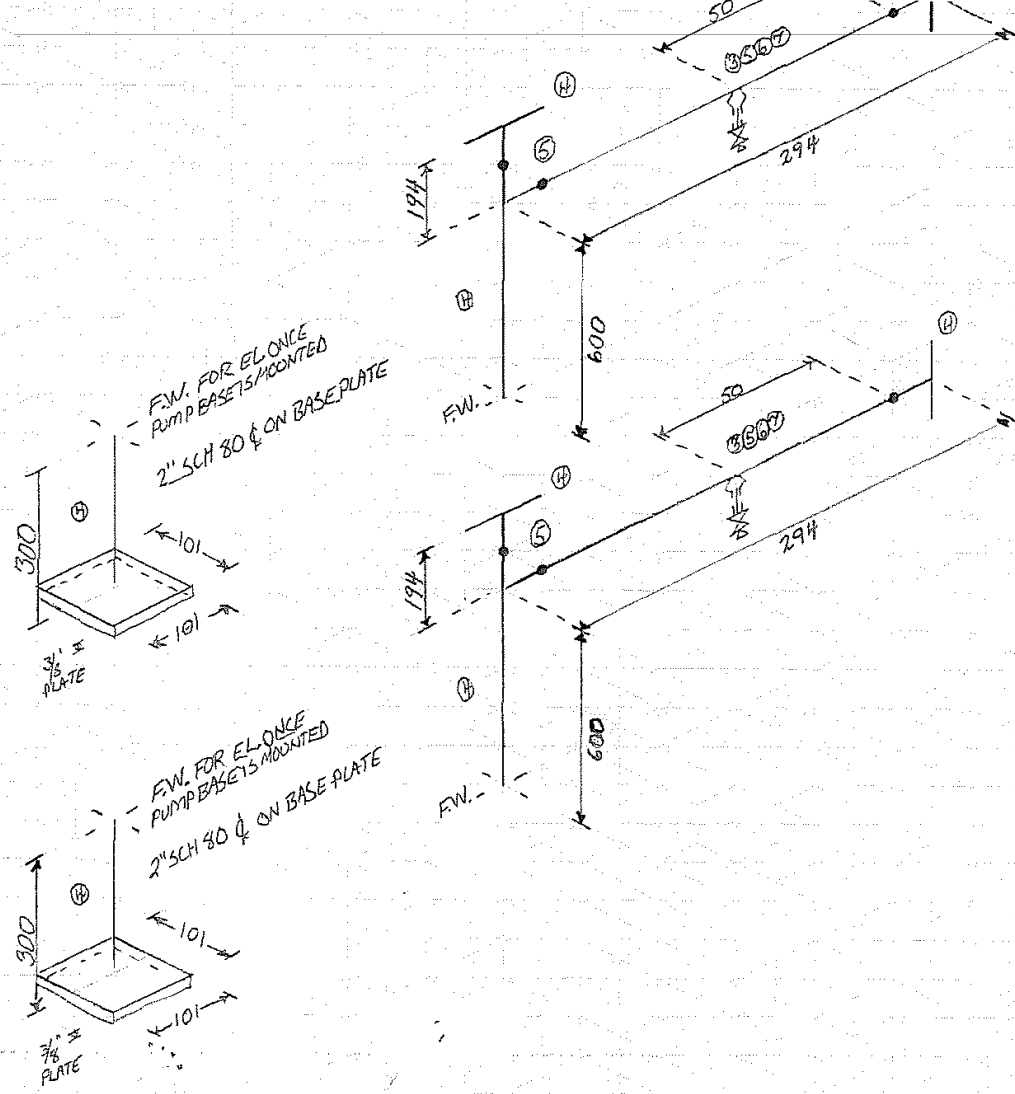


ITEM	QT
1	3
2	1
3	1
4	2M
5	
6	
7	
8	
9	
10	
11	
12	
13	
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15	
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22	
23	
24	
25	
26	



ITEM	QTY
1	6
2	2
3	2
4	
5	2
6	
7	1M
8	1M
9	
10	
11	
12	
13	
14	
15	
16	
17	
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19	
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21	
22	
23	
24	
25	
26	





ITEM	Q
1	4
2	2
3	1
4	2
5	2
6	2
7	2
8	2
9	
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## Maria Steele

---

**Subject:** Well pad 3 surface pump install  
**Location:** Microsoft Teams Meeting  
  
**Start:** Tue 2020-01-14 1:30 PM  
**End:** Tue 2020-01-14 2:00 PM  
**Show Time As:** Tentative  
  
**Recurrence:** (none)  
  
**Organizer:** Travis Shield

---

### Join Microsoft Teams Meeting

+1 587-601-5502 Canada, Fort McMurray (Toll)

Conference ID: 930 684 688#

[Local numbers](#) | [Reset PIN](#) | [Learn more about Teams](#) | [Meeting options](#)

---

## Maria Steele

---

**From:** Bimpe Adeoye <badeoye@greenfireoilandgas.com>  
**Sent:** January 16, 2020 5:33 PM  
**To:** Kyle Scott; Brett Hiebert  
**Cc:** Kevin Millar; Travis Shield  
**Subject:** Work Package - Truck Station Loading Arm Replacement Spool  
**Attachments:** Work Package - Replacement Loading Arm Spool.pdf

Hello Kyle / Brett,

We have an urgent need to replace one of the truck station loading arms. Can you work on this work package and get back to us with a quote soon.

Attached in the work package is PID, Isometric, LDT, Pipe & Valve Specifications. The service is Class AS, severe cyclic condition as per ASME B31.3

Please provide 2 quotes; one with stress relief and another without.

Let me know if you have any questions. Thank you.

Best Regards,

**Bimpe Adeoye**

Facility Engineer

Greenfire Oil and Gas Ltd.

[badeoye@greenfireoilandgas.com](mailto:badeoye@greenfireoilandgas.com)



**GREENFIRE**  
OIL AND GAS LTD.

SALES OIL TRANSFER  
45-04-02-206  
TK-230/232/234

PO-130-6"-AP-50H-GT2

SALES OIL  
45-04-02-206  
TK-230/232

PO-104-12"-AP-50H-GT2

PO-114-10"-AP-50H-GT2

PO-112-10"-AP-50H-GT2

RTU 2210 (NOTE 1)

SCADA

LOAD COMPARTMENT 1  
LOAD COMPARTMENT 2  
S/S PUMP  
CR LOAD PERMISSIVE

TRUCK LOADING SHACK  
BILL OF LADING PRINTER  
FLO BOSS COMPUTER  
(VOLUME)

SPLITTER

(MASS)

FT 2211

FE 2211

DI 2211

LL

HH

FT 2211

FE 2211

DI 2211

LL

HH

FT 2211

FE 2211

DI 2211

LL

HH

FT 2211

FE 2211

DI 2211

LL

HH

FT 2211

FE 2211

DI 2211

LL

HH

FT 2211

FE 2211

DI 2211

LL

HH

FT 2211

FE 2211

DI 2211

LL

HH

FT 2211

FE 2211

DI 2211

LL

TRUCK LOAD STATION #1  
(2 ARMS)  
PO-126-8"-AP-50H-

LOADING PLATFORM

SHUTDOWN  
LOAD STATION 1  
HS

TRUCK GROUNDING  
YSH 2211  
YSH 2212

SHUTDOWN  
LOAD STATION 2  
HS

LOAD COMPARTMENT 1  
LOAD COMPARTMENT 2  
S/S PUMP  
CR LOAD PERMISSIVE

FLO BOSS COMPUTER  
(VOLUME)

(MASS)  
FT 2212  
FE 2212  
DI 2212  
LL

HH

FT 2212  
FE 2212  
DI 2212  
LL

HH

FT 2212  
FE 2212  
DI 2212  
LL

HH

FT 2212  
FE 2212  
DI 2212  
LL

HH

FT 2212  
FE 2212  
DI 2212  
LL

HH

8" TWIN SEAL  
BALL VALVE  
c/w BLEED

4" PROVER  
CONNECTION

NO

4" PROVER  
CONNECTION

NO

4" PROVER  
CONNECTION

NO

4" PROVER  
CONNECTION

NO

4" PROVER  
CONNECTION

NO

4" PROVER  
CONNECTION

NO

4" PROVER  
CONNECTION

NO

4" PROVER  
CONNECTION

NO

4" PROVER  
CONNECTION

NO

4" PROVER  
CONNECTION

NO

# GENERAL NOTES

1. MASTER SCADA LOCATED AT CCR.

# REFERENCE DRAWINGS

NUMBER

TITLE

NO.

DESCRIPTION

BY

DATE

CHK

# REVISION



Macdonald Engineering Group Ltd.

CALGARY

ALBERTA

CANADA

DRAWN BY:

CHECKED BY:

APPROVED BY:

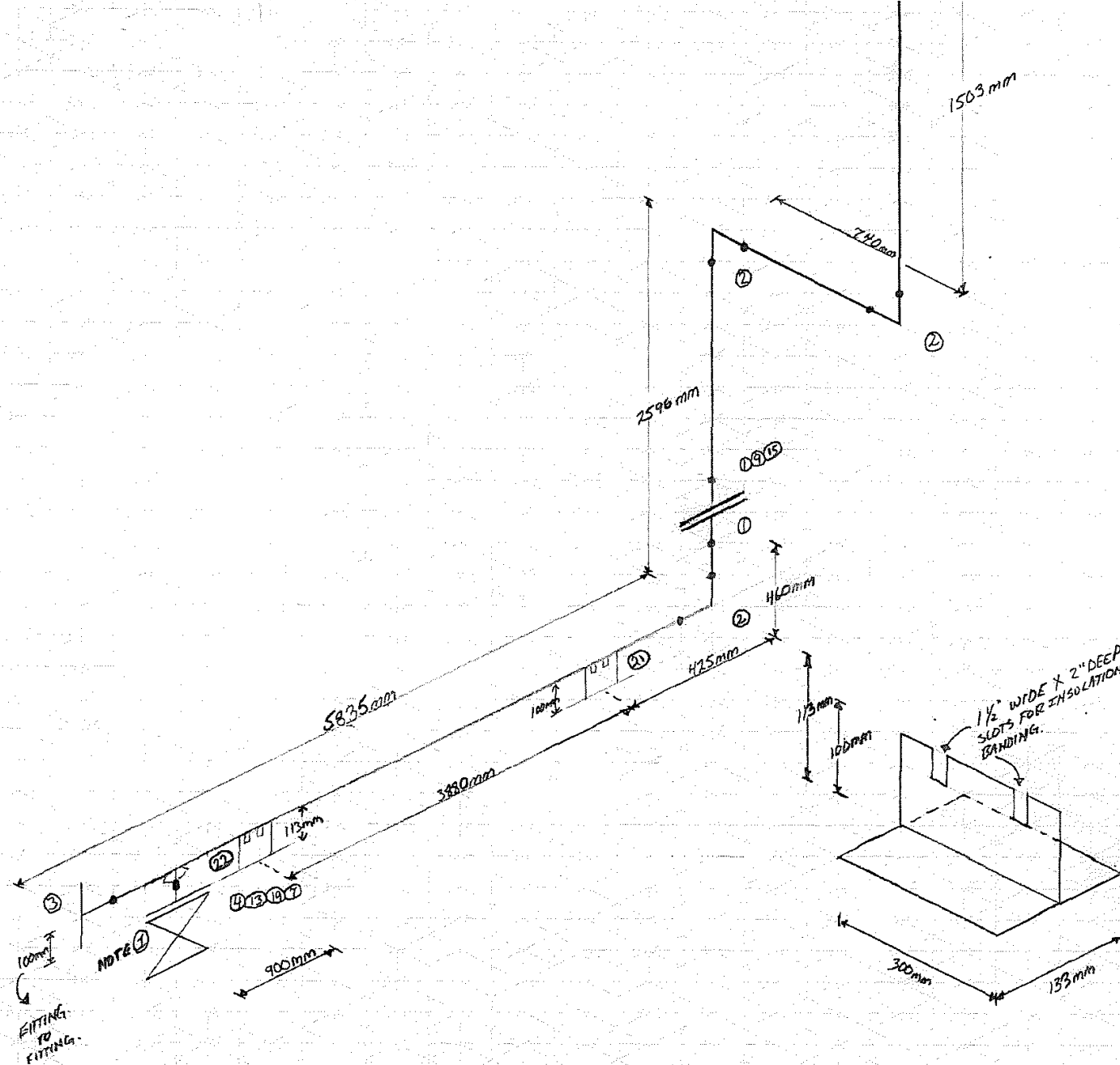
DATE:

SCALE:

AC

98-07-08

1:100



SHOE DETAIL WEST END  
# ②  
SHOE DETAIL EAST END  
# ②  
ADD 13mm TO HEIGHT OF SHOE  
NOTE ③ SHIP VALVE LOOSE

ITEM	QT
1	3
2	3
3	1
4	1
5	1
6	10
7	1
8	
9	16
10	
11	8
12	
13	8
14	
15	2
16	
17	1
18	
19	2
20	
21	1
22	1
23	
24	
25	
26	







<b>PRIMARY SERVICE</b>		<b>ANSI 150</b>	<b>TEMPERATURE</b>	<b>-29°C TO 250°C (4)</b>
<b>RATING:</b>			<b>LIMITS:</b>	
<b>SERVICE</b>	Sour Hydrocarbons, Produced Water, Rich and		<b>MATERIAL</b>	Carbon Steel
<b>:</b>	Lean Amine, Process Drain and Relief Systems		<b>GROUP:</b>	Group 1.1
<b>DESIGN CODE:</b>	ASME B31.3		<b>CORROSION ALLOWANCE:</b>	3.2 mm
<b>PRESSURE :</b>	1965 kPag @ 38°C (285 psig @ 100°F)		<b>STRESS</b>	Yes - Per
<b>TEMPERATURE</b>	Per ANSI B16.5 For Higher Temp		<b>RELIEF:</b>	GHOPCO
<b>:</b>				Specification
				GF5051
<b>RADIOGRAPHY</b>	100% Of All Butt Welds To Be 100% Radiographed			
<b>:</b>				

SIZE RANGE INCHES NPS	1/2" TO 1-1/2"	2" TO 10"	12" AND UP	NOTES
<b>SCHEDULE</b>	160	2" = 80, Others = 40	Calculate	1
<b>PIPE</b>	A-106 Gr. B, Smls	A-106 Gr. B, Smls	A-106 Gr. B, Smls	
<b>FITTINGS:</b>				1
<b>BUTT WELD</b>	A-234 Gr. WPB	A-234 Gr. WPB	A-234 Gr. WPB	
<b>S.W.</b>	A-105, 3000#, F.S.	Not Allowed	Not Allowed	5
<b>UNIONS</b>	3000#, F.S., A-105 GJ Integral Steel Seat			2, 5
<b>O'LETS</b>	3000#, F.S. , SCH To Match Pipe (BW), A-105N			5
<b>SWAGES</b>	A-106 Gr. B, Smls,, SCH to match pipe			
<b>NIPPLES</b>	A-106 Gr. B, Smls,, SCH to match pipe			
<b>FLANGES</b>	ANSI 150 RFWN, A-105N			3
<b>ORIFICE FLGS</b>	ANSI 300 RFWN, A-105N			
<b>GASKETS</b>	Spiral wound, Lamons, type WRI, 316 c/w solid inner & outer rings, graphite filler			
<b>STUDS</b>	A-193 Gr. B7M			
<b>NUTS</b>	A-194 Gr. 2HM			

NOTES: 1. 12" & Up Minimum Wall Thickness 9.525 mm (0.375"). For Branch Connections Refer to Paragraph 8.0.

2. 2" & Larger Use Flanges.

3. With OWNER Approval, Flanges 1/2" To 1 1/2" May Be R.F. Socket Weld.

4. MDMT For Nominal Wall Thickness Greater Than 13 mm (0.5") Must Be Increased Per ANSI B31.3 Figure 323.2.2 Curve B.

**CLASS AS (CONT'D)****PRIMARY SERVICE RATING: ANSI 150****TEMPERATURE LIMITS: -29°C TO 250°C****VALVES:** Refer To GHOPCO Specification GF5053, Valve Specifications, For Details Of The Following Valve Designations.

SIZE	GATE	GLOBE	BALL (2)	CHECK	NEEDLE (1)
1/2" - 1 1/2" S.W.	GA-2082	GL-2082	BA-2062	CH-2082	--
1/2" - 1 1/2" Scr'd <sup>(3)</sup>	GA-3082	GL-3082	BA-3062	CH-3082	NE-3602
1/2" - 1 1/2" S.W. x NPT	GA-5082	GL-5082	BA-5062	--	--
2"	GA-1012	GL-1012	BA-1012	CH-1012	--
3"	GA-1012	GL-1012	BA-1012	CH-1012	--
4"	GA-1012	GL-1012	BA-1012	CH-1012	--
6"	GA-1012	GL-1012	BA-1012X	CH-1012	--
8"	GA-1012	Use Gate	BA-1012GX	CH-1012	--
10"	GA-1012	Use Gate	BA-1012GX	CH-1012	--
12"	GA-1012G	Use Gate	BA-1012GX	CH-1012	--
14" & Up	GA-1012G	Use Gate	BA-1012G	CH-1012	--

- NOTES:**
1. Needle Valves 316 SS Bar Stock & Trim.
  2. Short Pattern Applies to Regular Port Valves Only.
  3. Unless otherwise approved by Owner, socket weld connections shall be used instead of threaded connections, except for Utility / Instrument Air service.

PRIMARY PRESSURE RATING						MISCELLANEOUS	
01	150# ANSI					WP	WEIR PATTERN
03	300# ANSI					TA	TANTALUM WETTED PARTS
06	600# ANSI					-	REGULAR PORT
08	API CLASS 800					C	CHAIN OPERATED
09	900# ANSI					E	ELONGATED STEM
15	1500# ANSI					F	FULL PORT
25	2500# ANSI					H	HIGH TEMPERATURE
60	6000 PSI CWP					T	STEM EXTENSION
100	10000 PSI CWP					W	WAFER
VALVE TYPE						B	BELLOWS STYLE STEM SEAL
IBB	INSTRUMENT with INTEGRAL BLOCK & BLEED					P	PRESSURE STEM SEAL
D	DIAPHRAM					S	STAINLESS STEEL BODY
BA	BALL					G	GEAR OPERATED
BU	BUTTERFLY					V	VERTICAL
CH	CHECK					X*	SHORT PATTERN BALL VALVE
GA	GATE					M	TRUNION MOUNTED BALL
GL	GLOBE					Y	Y-BODY GLOBE
NE	NEEDLE					L	PARALLEL SLIDE GATE
BD	BLOWDOWN						
SC	STOPCHECK					VALVE TRIM	
TC	THRU CONDUIT GATE					0	SWEET
WC	WAFER CHECK					1	STEAM, CONDENSATE
P	PLUG					2	SOUR (NACE W/TAG)
						3	LOW TEMP. SWEET/SOUR
END PREPARATION						4	CRYOGENIC SWEET
0	FLANGED/SCREWED					5	PTFE LINED
1	FLANGED (RF)					6	TFE LINED
2	SOCKET WELD					7	PFA or PTFE LINED
3	SCREWED					8	CORROSIVE CHEMICAL
4	MNPT X FNPT						
5	SOCKET WELD X SCREWED						
6	COMPRESSION						
7	WELDOLET X SCREWED						
8	FLANGED (RTJ)						
9	BUTT WELD						

GA-

1

09

0

S

\* Note: No "X" means a long pattern valve body is required



# VALVE SPECIFICATIONS

## CHECK VALVE TECHNICAL REQUIREMENTS

Tag #	Temp Rtg °C	ANSI Class	Ends	Size (NPS)	Bonnet	Seat Type	NACE	Body Mat'l	Seat Mat'l	
CH-3150	-29 / 250	1500	Thr'd	½ - 1½	Bolted	Integral	No	A105	13 Cr / Stellite	
CH-3151	-29 / 378	1500	Thr'd	½ - 1½	Welded	Integral	No	A105	Stellite	
CH-8091	-29 / 378	900	RJ Flg	3 - 24	Bolted	Integral	No	A216 WCB	Stellite	
CH-8151	-29 / 378	1500	RJ Flg	2	Bolted	Integral	No	A 105 / A216 WCB	Stellite	

## Gate Valve Technical Requirements

Tag #	Temp Rtg °C	ANSI Class	Ends	Size (NPS)	Port	Bonnet	Seat Type	Wedge Type	NACE	Body Mat'l	Seat Mat'l	Stem Mat'l
GA-1010	-29 / 250	150	RF Flg	2 - 24	Full	Bolted	Renewable	Flexible	No	A216 WCB	13 Cr	13 Cr
GA-1011	-29 / 378	150	RF Flg	2 - 24	Full	Bolted	Integral	Flexible	No	A216 WCB	Stellite	410SS
GA-1012	-29 / 250	150	RF Flg	2 - 24	Full	Bolted	Renewable	Flexible	Yes	A216 WCB	304 / 316SS	304 / 316SS
GA-1013	-46 / 250	150	RF Flg	2 - 24	Full	Bolted	Renewable	Flexible	Yes	A352-LCB / LCC	304 / 316SS	304 / 316SS
GA-1013S	-45 / 148	150	RF Flg	2 - 12	Reg	Bolted	Integral	Flexible	Yes	A351 CF8M	316SS	316SS
<b>GA-1014</b>	<b>-45 / 148</b>	<b>150</b>	<b>RF Flg</b>	<b>2 - 6</b>	<b>Reg</b>	<b>Bolted</b>	<b>Integral</b>	<b>Solid</b>	<b>No</b>	<b>Alloy 20</b>	<b>Alloy 20</b>	<b>Alloy 20</b>
<b>GA-1018</b>	<b>-45 / 148</b>	<b>150</b>	<b>RF Flg</b>	<b>8</b>	<b>Reg</b>	<b>Bolted</b>	<b>Aflas Dual Traverse Seals</b>	<b>Phenolic Scrapers</b>	<b>No</b>	<b>Xylan Coated T316SS</b>	<b>n/a</b>	<b>AL6XN</b>
GA-1030	-29 / 250	300	RF Flg	2 - 24	Full	Bolted	Renewable	Flexible	No	A216 WCB	13 Cr	13 Cr
GA-1031	-29 / 378	300	RF Flg	2 - 24	Full	Bolted	Integral	Flexible	No	A216 WCB	Stellite	410SS
GA-1032	-29 / 250	300	RF Flg	2 - 24	Full	Bolted	Renewable	Flexible	Yes	A216 WCB	304 / 316SS	304 / 316SS
GA-1033	-46 / 250	300	RF Flg	2 - 24	Full	Bolted	Renewable	Flexible	Yes	A352-LCB / LCC	304 / 316SS	304 / 316SS
GA-1060	-29 / 250	600	RF Flg	2 - 24	Full	Bolted	Renewable	Flexible	No	A216 WCB	13 Cr	13 Cr
GA-1061	-29 / 378	600	RF Flg	2 - 24	Full	Bolted	Integral	Flexible	No	A216 WCB	Stellite	410SS
GA-1062	-29 / 250	600	RF Flg	2 - 24	Full	Bolted	Renewable	Flexible	Yes	A216 WCB	304 / 316SS	304 / 316SS
GA-1063	-46 / 250	600	RF Flg	2 - 24	Full	Bolted	Renewable	Flexible	Yes	A352-LCB / LCC	304 / 316SS	304 / 316SS
GA-1090	-29 / 250	900	RF Flg	2 - 24	Full	Bolted	Renewable	Flexible	No	A216 WCB	13 Cr	13 Cr

REV. E: SEPTEMBER 15, 2014

L:\ENGINEERING\DE12F00002 - P2 MVR EVAPORATOR PROJECT - MOC 189\4. ENGINEERING\4.5 PIPING\J5053 - VALVE SPECIFICATIONS REV F.DOCX

## Maria Steele

---

**From:** Hangingstone Procurement <hangingstoneprocurement@greenfireoilandgas.com>  
**Sent:** January 20, 2020 5:22 PM  
**To:** Bimpe Adeoye; Hangingstone Procurement; Brett Hiebert; Kyle Scott  
**Cc:** Kevin Millar; Travis Shield  
**Subject:** RE: Work Package - Truck Station Loading Arm Replacement Spool

PO 201862

**From:** Bimpe Adeoye <badeoye@greenfireoilandgas.com>  
**Sent:** January 20, 2020 4:42 PM  
**To:** Hangingstone Procurement <hangingstoneprocurement@greenfireoilandgas.com>; Brett Hiebert <BHiebert@boomltd.ca>; Kyle Scott <KScott@boomltd.ca>  
**Cc:** Kevin Millar <kmillar@greenfireoilandgas.com>; Travis Shield <tshield@greenfireoilandgas.com>  
**Subject:** FW: Work Package - Truck Station Loading Arm Replacement Spool

Hi Tom,

Please proceed with this PO including PWHT so BOOM can get this asap.

Hi Brett / Kyle,  
We'll proceed with this purchase and you can purchase materials now and start fabricating.  
With respect to delivery, we might be able to pick this spool up. I'll confirm in a follow up email.

Thanks.

Best Regards,  
**Bimpe Adeoye**  
Facility Engineer  
Greenfire Oil and Gas Ltd.  
[badeoye@greenfireoilandgas.com](mailto:badeoye@greenfireoilandgas.com)



**GREENFIRE**  
OIL AND GAS LTD.

**From:** Brett Hiebert <[BHiebert@boomltd.ca](mailto:BHiebert@boomltd.ca)>  
**Sent:** January 20, 2020 9:16 AM  
**To:** Bimpe Adeoye <[badeoye@greenfireoilandgas.com](mailto:badeoye@greenfireoilandgas.com)>; Kyle Scott <[KScott@boomltd.ca](mailto:KScott@boomltd.ca)>  
**Cc:** Kevin Millar <[kmillar@greenfireoilandgas.com](mailto:kmillar@greenfireoilandgas.com)>; Travis Shield <[tshield@greenfireoilandgas.com](mailto:tshield@greenfireoilandgas.com)>  
**Subject:** RE: Work Package - Truck Station Loading Arm Replacement Spool

Good Morning Bimpe,

Thank you again for the opportunity.



Please see attached Pricing with and without PWHT. We have also included the price to deliver this material to site if required, this cost can be removed if you have alternate delivery instructions.

All piping material is 1 day away, so we would need to order today to start fabrication in the morning.

**Brett Hiebert**

Project Manager

Office: 403-946-0066

Email: [Bhiebert@boomltd.ca](mailto:Bhiebert@boomltd.ca) | [www.boomltd.ca](http://www.boomltd.ca)

**From:** Bimpe Adeoye <[badeoye@greenfireoilandgas.com](mailto:badeoye@greenfireoilandgas.com)>

**Sent:** January 16, 2020 5:33 PM

**To:** Kyle Scott <[KScott@boomltd.ca](mailto:KScott@boomltd.ca)>; Brett Hiebert <[BHiebert@boomltd.ca](mailto:BHiebert@boomltd.ca)>

**Cc:** Kevin Millar <[kmillar@greenfireoilandgas.com](mailto:kmillar@greenfireoilandgas.com)>; Travis Shield <[tshield@greenfireoilandgas.com](mailto:tshield@greenfireoilandgas.com)>

**Subject:** Work Package - Truck Station Loading Arm Replacement Spool

Hello Kyle / Brett,

We have an urgent need to replace one of the truck station loading arms. Can you work on this work package and get back to us with a quote soon.

Attached in the work package is PID, Isometric, LDT, Pipe & Valve Specifications. The service is Class AS, severe cyclic condition as per ASME B31.3

Please provide 2 quotes; one with stress relief and another without.

Let me know if you have any questions. Thank you.

Best Regards,

**Bimpe Adeoye**

Facility Engineer

Greenfire Oil and Gas Ltd.

[badeoye@greenfireoilandgas.com](mailto:badeoye@greenfireoilandgas.com)



**GREENFIRE**  
OIL AND GAS LTD.

## Maria Steele

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**From:** Hangingstone Procurement <hangingstoneprocurement@greenfireoilandgas.com>  
**Sent:** January 28, 2020 10:45 AM  
**To:** Kyle Scott  
**Cc:** Travis Shield; Hangingstone Procurement; Brett Hiebert  
**Subject:** RE: RFQ 201879 WO# 3787 and RFQ 201880 "Plans To Boom"  
**Attachments:** 201879.pdf

Good morning Kyle,

Please see attached PO.

Sincerely,

Jodi Boudreau  
SCM | Greenfire Oil and Gas Ltd.  
[jboudreau@greenfireoilandgas.com](mailto:jboudreau@greenfireoilandgas.com)  
Please "reply all" when responding



**GREENFIRE**  
OIL AND GAS LTD.

**From:** Kyle Scott <KScott@boomltd.ca>  
**Sent:** January 27, 2020 4:55 PM  
**To:** Jodi Boudreau <[jboudreau@greenfireoilandgas.com](mailto:jboudreau@greenfireoilandgas.com)>  
**Cc:** Travis Shield <[tshield@greenfireoilandgas.com](mailto:tshield@greenfireoilandgas.com)>; Jerry Hansen <[jhansen@greenfireoilandgas.com](mailto:jhansen@greenfireoilandgas.com)>; Jason Read <[jread@greenfireoilandgas.com](mailto:jread@greenfireoilandgas.com)>; Chad Richard <[crichard@greenfireoilandgas.com](mailto:crichard@greenfireoilandgas.com)>; Terry Thomas <[tthomas@greenfireoilandgas.com](mailto:tthomas@greenfireoilandgas.com)>; Hangingstone Procurement <[hangingstoneprocurement@greenfireoilandgas.com](mailto:hangingstoneprocurement@greenfireoilandgas.com)>; Brett Hiebert <[BHiebert@boomltd.ca](mailto:BHiebert@boomltd.ca)>  
**Subject:** RE: RFQ 201879 WO# 3787 and RFQ 201880 "Plans To Boom"

Jodi

Please see attached estimate for both these piping projects. If there are any questions feel free to contact me at anytime. Thanks for the opportunity.



### Kyle Scott, Superintendent

Office: 403-946-0066 | Cell: 403-304-9220  
Email: [kscott@boomltd.ca](mailto:kscott@boomltd.ca) | [www.boomltd.ca](http://www.boomltd.ca)  
Box 1379, 42A McCool Crescent  
Crossfield Alberta T0M 0S0

**From:** Jodi Boudreau

**Sent:** Thursday, January 23, 2020 1:57 PM

**To:** Kyle Scott

**Cc:** Travis Shield; Jerry Hansen; Jason Read; Chad Richard; Terry Thomas; Hangingstone Procurement

**Subject:** RFQ 201879 WO# 3787 and RFQ 201880 "Plans To Boom"

Good afternoon Kyle,

Travis wanted me to send these plans over to you for quote. He did mention he wanted pressure testing as well and thought he may have forgotten to add it as a requirement but assumed you would know to do that anyway.

Sincerely,

Jodi Boudreau

**SCM | Greenfire Oil and Gas Ltd.**

[jboudreau@greenfireoilandgas.com](mailto:jboudreau@greenfireoilandgas.com)

Please "reply all" when responding



**GREENFIRE**  
OIL AND GAS LTD.

## Maria Steele

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**From:** Bimpe Adeoye <badeoye@greenfireoilandgas.com>  
**Sent:** January 31, 2020 1:05 PM  
**To:** Toni Hudson  
**Cc:** Brett Hiebert; Kyle Scott  
**Subject:** RE: Preliminary QC Documentation for Replacement in kind Spool Fabrication  
**Attachments:** updated ITP signed\_ Pad 4 & FE Spools.pdf

Hi Toni,

Find attached the last set of documents; signed for the Loading Arm Spools delivered last week.

Let me know if you have any questions. Thank you.

Best Regards,

**Bimpe Adeoye**

Facility Engineer

Greenfire Oil and Gas Ltd.

[badeoye@greenfireoilandgas.com](mailto:badeoye@greenfireoilandgas.com)



**GREENFIRE**  
OIL AND GAS LTD.

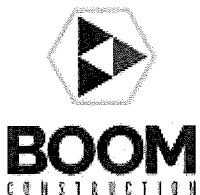
**From:** Toni Hudson <THudson@boomltd.ca>  
**Sent:** January 22, 2020 3:19 PM  
**To:** Bimpe Adeoye <badeoye@greenfireoilandgas.com>  
**Cc:** Brett Hiebert <BHiebert@boomltd.ca>; Kyle Scott <KScott@boomltd.ca>  
**Subject:** Preliminary QC Documentation for Replacement in kind Spool Fabrication

Hello Bimpe,

Please see the attached documents for the 2 small spools we are currently fabricating for you. ITP, Weld Procedure Approval, our contract review and Pre-job Checklist. I've also included the 2 weld procedures utilized for this project. BM-3 for the PWHT piping and BOOM- L1 for the weld on shoes.

If you have any questions please don't hesitate to contact me- I'm always happy to help!

Thank you kindly



**TONI HUDSON**

Lead Quality Inspector, CWB level 2 Welding Inspector

Office: 403-946-0066

Cell: 403-559-4178

Email: [Thudson@boomltd.ca](mailto:Thudson@boomltd.ca) | [www.boomltd.ca](http://www.boomltd.ca)

Box 1379, 42A McCool Crescent  
Crossfield Alberta T0M 0S0

OWNER / PROJECT: Greenfire Pad 4 Piping Fab  
and Pt - 2020/2520 Piping Spools BS

PROJECT LOCATION: Shop fabrication (Boom shop)

Bimpe Adenipe *Adenipe*

HOLD TYPE LEGEND: HP = Hold Point A1 = 100% Actual Inspection A2 = Random Inspection R1 = 100% Document review R2 = Random Document review N = Notify but not require

NO.	DESCRIPTION OF ACTIVITIES	CONTROLLING DOCUMENTS	BOOM PROCEDURE	VERIFICATION DOCUMENTS	BOOM QUALITY CONTROL		
					HOLD TYPE	INITIAL	DATE
1	Project scope of work (including specifications and IFC drawings have been received by Boom.	CODE of Construction: ASME B31.3-2012  ASME Sect. IX - 2017  Greenfire Piping Spec: CH & BS  Piping Materials J5050 Rev M  Piping Materials - Sour Service Supplement J5051 Rev C  Valve Specifications J5053 Rev F	QSM Procedure 3 - Document Control QSM Procedure 20 - Record Retention	Contract documents, Document Transmittals	HP	VL	11-18
2	Boom Welding procedure(s) have been submitted to and approved by the owner for use. BOOM-IN Rev.0 for non-PWHT, BM-3 for PWHT		QSM Procedure 19 - Welding	Approval of weld procedure by one of the following: Signed Quality Check list, Email, or First Page of WPS stamped 'Approved' or signed	HP	VL	11-18
3	Welders are Qualified in accordance with ASME Section IX are suitable for Approved Weld Procedures as applicable.		QSM Procedure 19 - Welding	Welder Log, Welders PQRs/ Tickets	HP	VL	11-18
4	Materials received, verified in compliance with project requirements and have required traceability documentation.		QSM Procedure 14 - Material Purchasing QSM Procedure 20 - Record Retention	Material Receiving documents: Material Requisition, Packing Slips and MTR's	R1	VL	11-18
5	NDE & PWHT company Provided by Owner or Approved by Owner.		QSM Procedure 10, 11, 12, 13 - LPL, MT, RT, UT	Signed Quality Checklist or email from Owner Rep. or similar	HP	JRH	12-05
6	Verify all welding is performed in accordance with approved welding procedure and welds are Mapped.		Approved WPS QSM Procedure 19 - Welding	Weld maps / As-Built / Red-lined drawings.	HP	JRH	12/05
7	Piping is constructed as per IFC drawings for Red-lined as required.		QSM Procedure 6 - Final Examination	Weld maps / As-Built / Red-lined drawings.	HP	JRH	12/05
8	PWHT is completed (if applicable) and Charts and reports have been reviewed and accepted by Owner Rep.		QSM Procedure 16 - Post Weld Heat Treatment	PWHT Report and Charts NOTE: PWHT FOR PIPING SPEC "BS" ONLY.	HP	JRH	11/21
9	All Required NDE is completed by Level II Technician and Technician Qualifications are retained in Turn Over Package		QSM Procedure 10, 11, 12, 13 - LPL, MT, RT, UT QSM Procedure 20	NDE Reports and Technician Qualifications.	HP	JRH	11/22
10	Hydrostatic Testing Complete and Pressure Test Record Signed / Approved by Owner.		QSM Procedure 7 - Hydrostatic testing	Pressure Test Report, Calibration Certs for 2 gauges	HP	JRH	11/22
11	Bolt Torque complete. Spool / Line / System Turned Over to Client or Ready for Transport.		QSM Procedure 20 - Record Retention	ABSA Construction data report ABS3 or Hydro test package, Torque sheets as required. NOTE: SPOOL INSTALLATION NOT PART OF SCOPE OF WORK	HP	JRH	12/05
12	Non-Conformances			All NCRs will be reviewed and signed off with the client - <i>None for this Project</i>	HP	JRH	12/05

213



14	Final Inspection/Release		on ITP and TCCC	
	Final Acceptance of ITP Related Work by Boom Construction		TCCC- Transfer of Care, Custody and Control	HP
	PRINT: <u>TONI HUDSON</u> SIGN: <u>CRH</u> DATE: <u>Dec 5, 2019</u>		Final Acceptance of ITP Related Work by Owner Rep.:	
			PRINT: <u>BIMPE ADJOYE</u> SIGN: <u>[Signature]</u>	

SHOP PIPING FABRICATION ITP Rev. B'15

## Brett Hiebert

---

**From:** Travis Shield <tshield@greenfireoilandgas.com>  
**Sent:** March 26, 2020 11:17 AM  
**To:** Brett Hiebert  
**Cc:** Natasha Wenckowski; Keisha Carson  
**Subject:** Re: Milestone Certificate #001 Mar 19 2020.pdf

Hi Brett

It looks good. I'll print, sign and scan after I get back to the office from vacation.

Thanks,  
Travis

Sent from my Bell Samsung device over Canada's largest network.

---

**From:** Brett Hiebert <Bhiebert@boomltd.ca>  
**Sent:** Thursday, March 19, 2020 4:18:05 PM  
**To:** Travis Shield <tshield@greenfireoilandgas.com>  
**Cc:** Natasha Wenckowski <NWenckowski@boomltd.ca>; Keisha Carson <kcarson@boomltd.ca>  
**Subject:** Milestone Certificate #001 Mar 19 2020.pdf

Good afternoon Travis,

Please see attached Milestone Certificate with the discount applied for PWHT and Remaining NDE. Please sign and return so we can invoice for the completed fabrication.

Regards,



**Brett Hiebert**

Project Manager

Office: 403-946-0066

Cell: 403-619-7111

Email: [Bhiebert@boomltd.ca](mailto:Bhiebert@boomltd.ca) | [www.boomltd.ca](http://www.boomltd.ca)

Box 1379, 42A McCool Crescent

Crossfield Alberta T0M 0S0

## Maria Steele

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**From:** Travis Shield <tshield@greenfireoilandgas.com>  
**Sent:** April 8, 2020 1:48 PM  
**To:** Andrew Silberer  
**Cc:** Brett Hiebert  
**Subject:** RE: Rev 1 COR 001 GF MOC 100 BOOM Job 20041  
**Attachments:** COR 001 Cost Estimate Rev1 signed.pdf; GFMOC 100-20041-COR-001 Rev1 signed.pdf

Good afternoon. Sorry for the delay. Please find attached scanned signed COR documents.

Thanks,

Travis Shield, P.Eng.  
Facilities Engineer  
Greenfire Oil and Gas Ltd.  
587.834.8354 (cell)  
587.315.5655 (office)  
[tshield@greenfireoilandgas.com](mailto:tshield@greenfireoilandgas.com)



**GREENFIRE**  
OIL AND GAS LTD.

**From:** Andrew Silberer <ASilberer@boomltd.ca>  
**Sent:** March 18, 2020 10:18 AM  
**To:** Travis Shield <tshield@greenfireoilandgas.com>  
**Cc:** Brett Hiebert <BHiebert@boomltd.ca>  
**Subject:** Rev 1 COR 001 GF MOC 100 BOOM Job 20041

Hi Travis

Please see attached revised COR – 001 with the field verification time removed.

Thanks Andrew

**From:** Travis Shield <[tshield@greenfireoilandgas.com](mailto:tshield@greenfireoilandgas.com)>  
**Sent:** March 16, 2020 1:32 PM  
**To:** Andrew Silberer <[ASilberer@boomltd.ca](mailto:ASilberer@boomltd.ca)>  
**Cc:** Brett Hiebert <[BHiebert@boomltd.ca](mailto:BHiebert@boomltd.ca)>  
**Subject:** RE: COR 001 GF MOC 100 BOOM Job 20041

Hi Andrew,

Any chance you can remove the field verification with travel time costs from this COR? Check all dimensions prior to fabrication notes has always been on all drawing revisions from the start and should have been part of the lump sum estimate.

Regarding structural materials, can they just hold on to them for us till end of April? We don't want to incur more costs at this time if we can help it.

Let me know if that sounds ok?

Thanks,

Travis

Sent from Mail for Windows 10

**From:** Andrew Silberer

**Sent:** March 13, 2020 11:54 AM

**To:** Travis Shield

**Cc:** Brett Hiebert

**Subject:** COR 001 GF MOC 100 BOOM Job 20041

Hi Travis

Please see attached COR 001 for your review and approval.

- COR 001 document
- COR 001 cost estimate.

Also, the structural steel fabricator is asking to have the material moved from their yard. Boom can move this to our shop for now if you agree.

Thanks Andrew



**Andrew J. Silberer, P.Eng.**

Office: 403-946-0066 | Cell: 403-586-4549

Email: [asilberer@boomltd.ca](mailto:asilberer@boomltd.ca) | [www.boomltd.ca](http://www.boomltd.ca)

Box 1379, 42A McCool Crescent

Crossfield Alberta T0M 0S0

Change Order Request Estimate Summary								TICKET NUMBER: BUDGET ESTIMATE
BOOM Construction LTD - PO Box 1379 Crossfield AB T0M 0S0 - Ph.403.946.0066 - www.boomltd.ca								DATE: 10-Mar-20
CUSTOMER: Greenfire Hangingstone Pump 3 Addition - MOC 100								PO NUMBER: BUDGET ESTIMATE
PROJECT: 20041								COR Number COR-001 Rev1
ACTIVITIES: Cost Capturing, RFI changes, Field Welding (pile cut and cap), Field Dimension Verification, IFB to IFC drawings changes								

Description	Notes	LOA	REG HRS	RATE	OT HRS	RATE	AMOUNT
1	Rig Welder - Carbon Steel	On-Site - Piles with travel time	40	\$124.48	15	\$124.48	\$ 6,846.43
2	Rig Welder - Carbon Steel	Shop - RFI-002	16	\$124.48	4	\$124.48	\$ 2,489.61
3	Rig Welder - Carbon Steel	Shop - RFI-008 , RFI-009	8	\$124.48	2	\$124.48	\$ 1,244.81
4							--
5	Welder Journeyman	Field Verification with travel time		\$67.80		\$86.83	\$ -
6	Journeyman Pipe/Steam	Field Verification with travel time		\$62.78		\$80.40	\$ -
7							--
8	General Foreman	All Activity	4	\$94.62			\$ 378.47
9	Project Manager	All Activity including QAQC	8	\$128.73			\$ 1,029.85
10	Journeyman Pipe/Steam	All Activity fitting drawing IFB to IFC	8	\$62.78	2	\$80.40	\$ 663.02
11							--
12							--
13							--
14							--
15							--
16							--
17							--
18							--
19							--
20							--
21							--
22							--
							\$ 12,652.18

Description	Qty	RATE TYPE	RATE	AMOUNT
1				--
2				--
3				--
4				--
5				--
6				--
7				--
8				--
9				--
SUBTOTAL - EQUIPMENT				\$ -

Description	SUPPLIER / INVOICE #	QUANTITY	UNIT RATE	UNIT	MARKUP (IF APPLICABLE)	AMOUNT
1	PVF - Fittings / Studs and Nuts/Gaskets	Outkast	1	\$12,859.65	10%	\$14,145.62
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
SUBTOTAL - THIRD PARTY/MATERIALS						\$ 14,145.62

<div style="display: flex; align-items: center;"> <div style="font-size: 2em; font-weight: bold; margin-right: 10px;">BOOM</div> <div> <p style="margin: 0;">APPROVAL:</p> <p style="margin: 0; font-size: 1.2em;"><b>TRAVIS SHIELD</b></p> <p style="margin: 0; font-size: 0.8em;">Client Representative (Name)</p> <p style="margin: 0; font-size: 0.8em;"><i>[Signature]</i></p> <p style="margin: 0; font-size: 0.8em;">Client Representative (Signature)</p> </div> </div>	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">Qu.</td> <td style="width: 10%;">Rate</td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> </tr> <tr> <td>LOA:</td> <td>\$150.00</td> <td>\$</td> <td></td> <td></td> <td>-</td> </tr> <tr> <td></td> <td>LABOUR:</td> <td>\$</td> <td></td> <td></td> <td>12,652.18</td> </tr> <tr> <td></td> <td>EQUIPMENT:</td> <td>\$</td> <td></td> <td></td> <td>-</td> </tr> <tr> <td></td> <td>THIRD PARTY:</td> <td>\$</td> <td></td> <td></td> <td>14,145.62</td> </tr> <tr> <td></td> <td>TOTAL THIS TICKET:</td> <td>\$</td> <td></td> <td></td> <td>26,797.79</td> </tr> </table>	Qu.	Rate					LOA:	\$150.00	\$			-		LABOUR:	\$			12,652.18		EQUIPMENT:	\$			-		THIRD PARTY:	\$			14,145.62		TOTAL THIS TICKET:	\$			26,797.79
Qu.	Rate																																				
LOA:	\$150.00	\$			-																																
	LABOUR:	\$			12,652.18																																
	EQUIPMENT:	\$			-																																
	THIRD PARTY:	\$			14,145.62																																
	TOTAL THIS TICKET:	\$			26,797.79																																



Contractor: Boom Construction Ltd.

COR No.: GFMOC100-20041-COR-001 Rev 1

CORN Originator: Andrew J. Silberer, P.Eng.

COR Date: Mar-10-2020

Phone No. (403) 586-4549

Contract

Email Address: asilberer@boomltd.ca

Title and No.: Greenfire – MOC 100

PO 201906

This Change Order Request is submitted by the Contractor to the Company to request the following Change, in accordance with the Changes provision of the Contract.

Priority: ☒ High ☐ Medium ☐ Low

#### CHANGE REQUEST DEFINITION

##### Description of Change:

Additional Scope from IFB to IFC Drawings, RFI Changes, Field Welding On-Site.

##### Reason for Change:

Increase constructability of piping system and transportation of spools and accommodation of changes to the IFB ISO drawings to IFC issued drawings.

##### Cost Impact: PO

Line Item	Description	Amount
1	Additional Break Flanges RFI, Field Welding, IFB to IFC drawing Changes increase in material and labour	\$26,797.79
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
<b>TOTAL</b>		<b>\$26,797.79</b>

##### Impact of Not Implementing Change:

Piping system would not service the design need and the pipe would not be transportable.

##### Alternative to Proposed Change:

N/A

### CHANGE REQUEST IMPACT

Cost Impact:

\$26,797.79

Schedule Impact:

n/a

Attachments:

Cost Estimate

### CONTRACTOR REQUEST

Authorized  
Signature:

Name: Andrew J. Silberer, P.Eng.

Title: Project Manager

### COMPANY REVIEW

Recommendation: ☒ Accept ☐ Reject ☐ Hold

Reviewer's  
Signature:

Name: Travis Shield, P.Eng.

Title: Facilities Engineer

## Maria Steele

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**From:** Travis Shield <tshield@greenfireoilandgas.com>  
**Sent:** March 18, 2020 3:14 PM  
**To:** Brett Hiebert; Kyle Scott  
**Cc:** Jerry Hansen; Rob Berglund; Chad Richard; Kevin Millar; Terry Thomas; Jason Read; Darren Crawford; Ryan Martyn  
**Subject:** Greenfire MOC 123 - HTS offline desand system piping spools  
**Attachments:** MOC 123 field sketches - TS mark up.pdf; GF5050 - Piping Materials Rev N\_updated.pdf; J5053 - Valve Specifications.pdf

Hi Brett,

As discussed, could you please see attached isometric piping drawings and pipe/valve specifications for MOC 123. Could you please revise your previous estimation work, reduce the scope to what is shown clouded in red and provide the cost estimate and delivery time. Note that we will not require field install, just materials, shop fabrication and hauling.

Let me know if you have any questions.

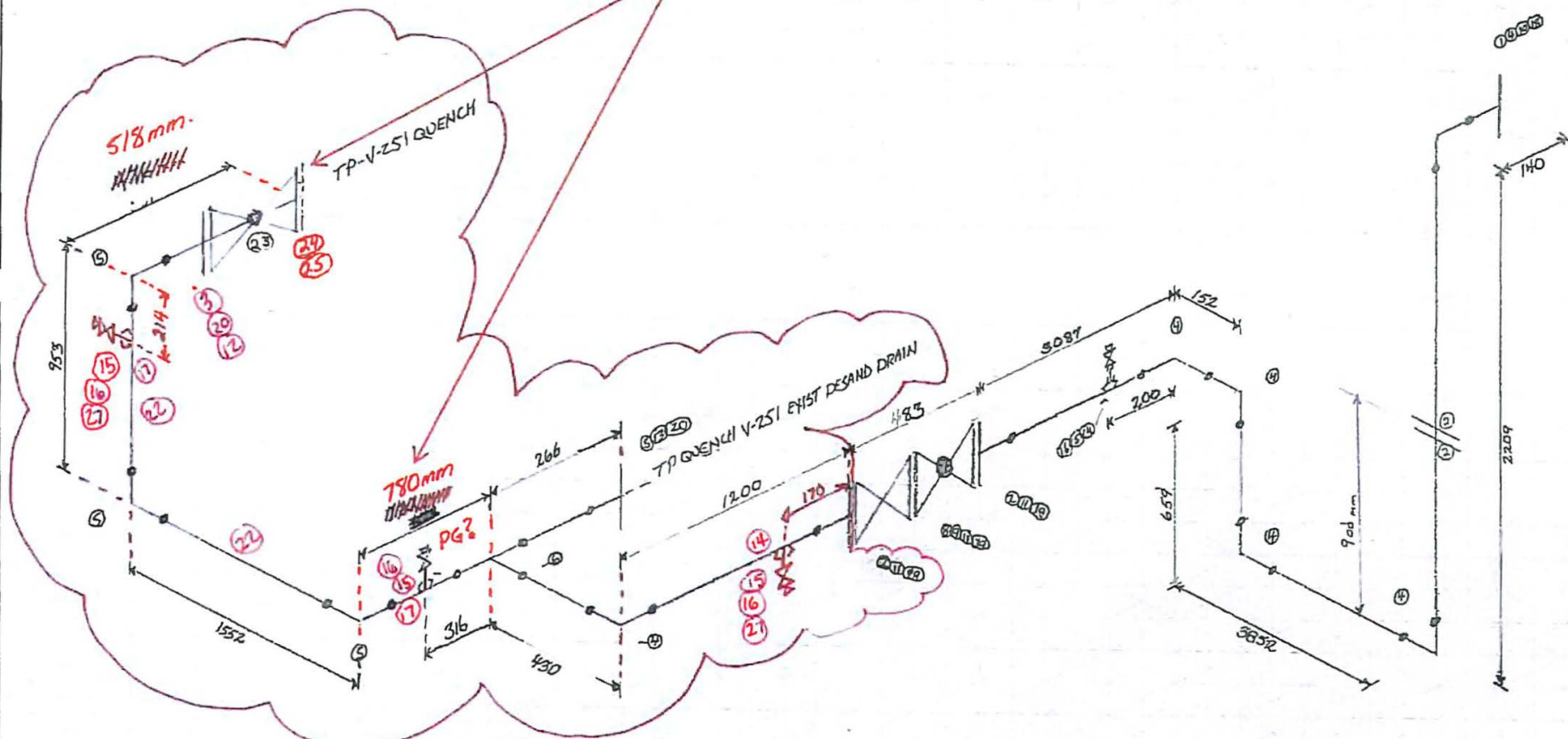
Thanks,

Travis Shield, P.Eng.  
Facilities Engineer  
Greenfire Oil and Gas Ltd.  
587.834.8354 (cell)  
587.315.5655 (office)  
[tshield@greenfireoilandgas.com](mailto:tshield@greenfireoilandgas.com)



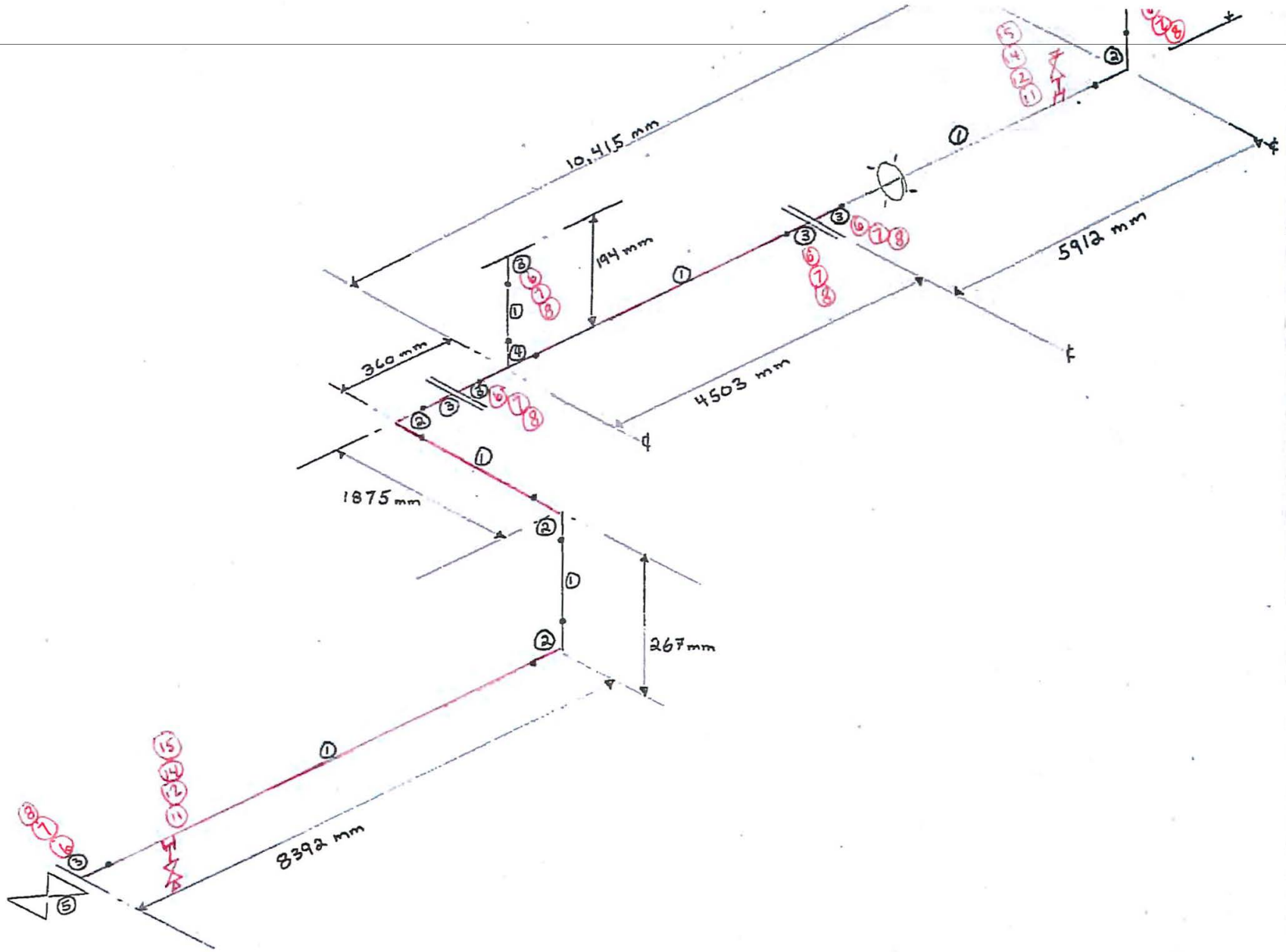
ITEM	QTY
1	1
2	1
3	2
4	1
5	3
6	1
8	1
9	1
10	4
11	8
12	8
13	8
14	5
15	43
16	43
17	2
18	1
19	1
20	4
21	2
22	4m
23	1
24	1
25	8
26	1
27	3

Measurements reflect the addition of a spec blind



- NOTE;
- FABRICATE ONLY WHAT IS IN RED
  - REMAINING 2" FABRICATION TBD.
  - SEE VALVE SPECIFICATION J5053
  - DIMENSIONS HAVE BEEN FIELD MEASURED.

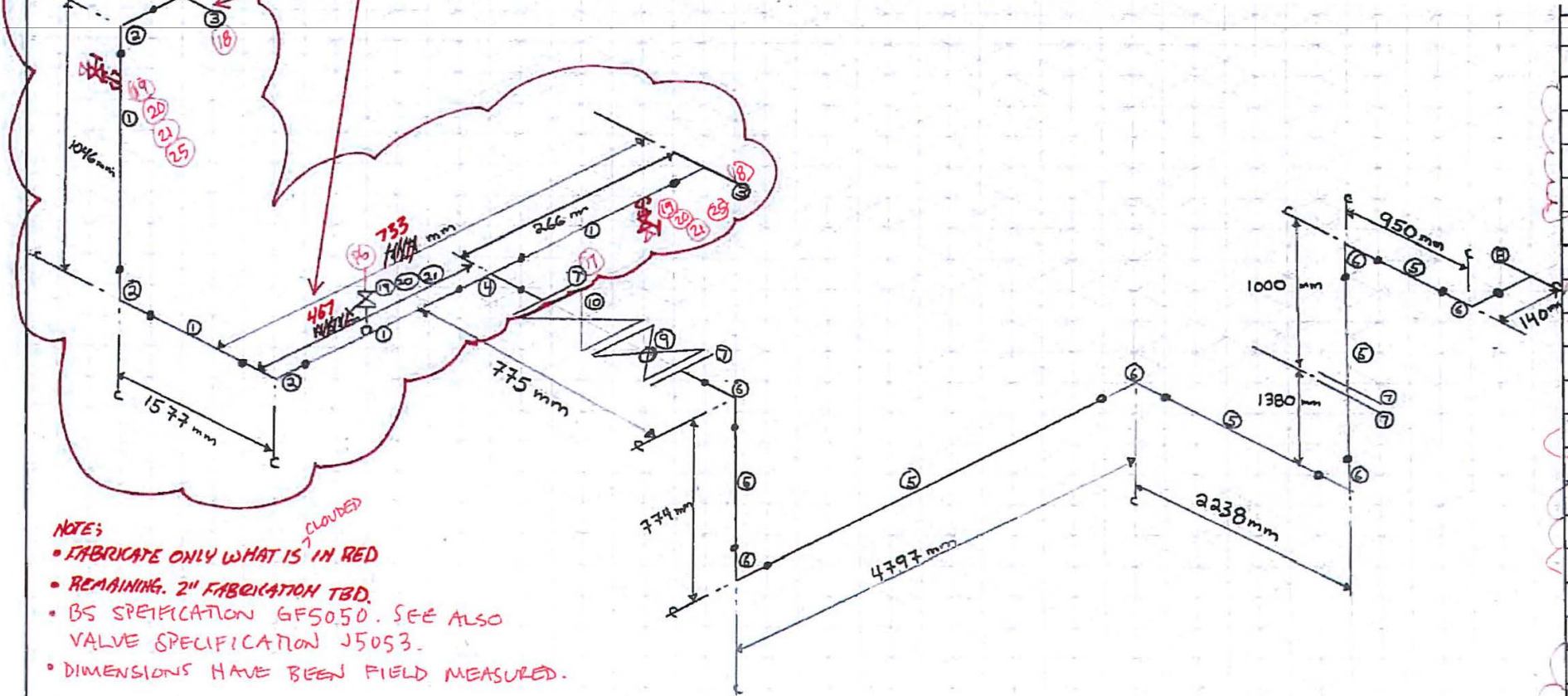




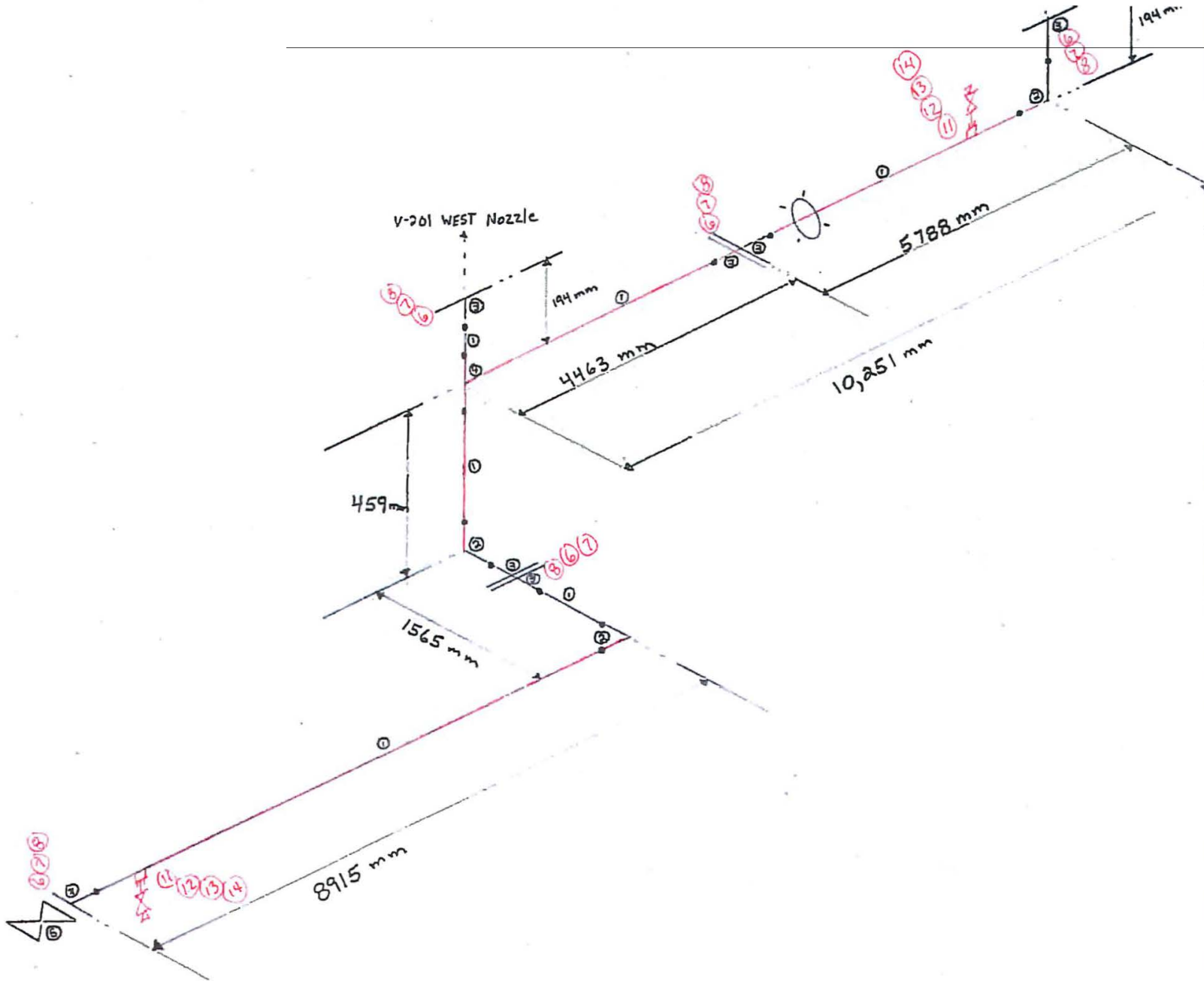
ITEM	QT
1	70
2	4
3	7
4	1
5	1
6	48
7	96
8	6
11	2
12	2
14	2
15	2
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	





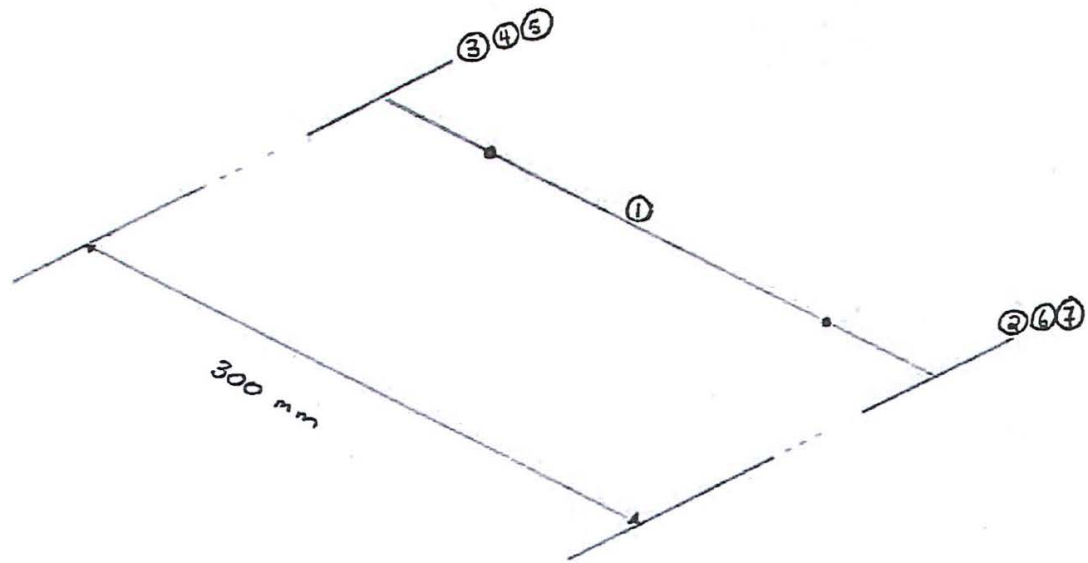


ITEM	QTY
1	334
2	3
3	2
4	1
5	40
6	6
7	1
8	1
9	1
10	1
11	8
12	4
13	8
14	16
15	16
16	1
17	1
18	3
19	1
20	1
21	1
22	1
23	8
24	1
25	2
26	



DOWN	
ITEM	QT
1	70
2	3
3	7
4	1
5	
6	40
7	80
8	5
11	2
12	2
13	2
14	2
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	





SHIP  
loose

DOWN	
ITEM	QTY.
1	310mm
2	2
3	2
4	8
5	16
6	4
7	8
8	1
9	1
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	





**GREENFIRE OIL AND GAS LTD.**

***SPECIFICATIONS***

**PIPING MATERIALS**

**GF5050**

DATE	REVISION	AUTHOR	TECHNICAL MANAGER	V.P. OPERATIONS
September 13, 1999	G	M.E.G.	-	-
MARCH 12, 2004	H	B. A.		
March 24, 2004	I	B. A.		
March 6, 2013	J	G.G./AHLS		
Dec 3, 2013	K	G.G./AHLS		
March 4, 2014	L	G.G./AHLS		
Sept 15, 2014	M	G.G./AHLS/DR		
Nov 02, 2019	N	H.M.		





## PIPING MATERIALS

GF5050

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**PIPING MATERIALS****GF5050****1.0 SCOPE**

This specification governs the selection and limitations of pipe and piping system components and is to be used in conjunction with GHOPCO Specification GF5010, Piping Design and Layout.

**2.0 CODES, REGULATIONS, STANDARDS**

2.1 Vendor shall meet or exceed the requirements of the latest edition of the following codes, regulations and standards, except as superseded herein. In cases where more than one code, regulation or standard apply to the same condition, the most stringent shall be followed. In the event of a conflict between this specification and other specifications or correspondence, the OWNER shall be consulted and a ruling, in writing, shall be obtained before any work is started.

- ASME Boiler and Pressure Vessel Code.
- ASME B16.9, Wrought Steel Butt welding Fittings.
- ASME B16.11, Steel Socket Weld Fittings.
- ASME B16.20, Metallic Gaskets for Pipe Flanges - Ring Joint, Spiral Wound and Jacketed.
- ASME B16.28, Butt welding Short Radius Elbows and Returns.
- ASME B16.34, Valves - Flanged, Threaded and Weld End.
- ASME B16.5, Steel Pipe Flanges and Flanged Fittings.
- ASME B31.1, Power Piping.
- ASME B31.3, Process Piping.
- ASME B31.4, Liquid Transportation Systems for Hydrocarbons.
- ASME B31.5, Refrigeration Piping.
- ASME B31.8, Gas Transmission and Distribution Piping Systems.
- API 1104, Welding of Pipelines and Related Facilities.
- API 2510, Design and Construction of LPG Installations at Marine and Pipeline terminals, Natural Gas Processing Plants, Refineries and Tank Farms For LPG Transfer and Storage Piping.
- API 598, Valve Inspection and Testing.
- API 600, Steel Gate Valves - Flanged and Butt welding Ends.
- API 602, Compact Steel Gate Valves.
- API 941, Steels for Hydrogen Service at Elevated Temperatures and Pressures in Petroleum Refineries and Petrochemical Plants.
- ASTM Standards, as applicable
- NACE MR-01-75, Material Requirement - Sulfide Stress Cracking Resistant Material for Oilfield Equipment.
- Z-662, CSA Standard for Pipelines.

**PIPING MATERIALS****GF5050**

- Regulations, Codes and Statutes of the Authorities having jurisdiction in the location of installation.
- 2.2 The following GREENFIRE Specifications shall be used in conjunction with this specification where applicable:
- GF5010 Piping Design and Layout
  - GF5051 Piping Materials - Sour Service Supplement
  - GF5052 Piping Materials - Low Temperature Supplement
  - GF5053 Valve Specification
- 2.3 Some requirements in this specification may be modified by specific requirements in the Purchase Specification. In case of conflict, the specific requirements supersede this specification.
- 2.4 Any deviation from this specification must be approved, in writing, by OWNER. Such written approval must be obtained prior to the commencement of any work which would constitute such a deviation.

**3.0 GENERAL**

- 3.1 Except under special conditions of severity, hazard, etc., the materials used shall be in accordance with the Piping Material Specification which are based on the design pressure and temperature and on the type of service. The materials used under special conditions of severity and hazard must be suitable for the particular service conditions involved.
- 3.2 All material used shall be in accordance with code requirements and industry standards for good workmanship.
- 3.3 Pipe materials shall be selected as follows, whenever temperature is the governing factor.

<b><u>Material</u></b>	<b><u>Temperature Range</u></b>
Carbon Steel	-29°C to 454°C
Killed carbon steel	-29°C to -46°C
3½ nickel or 304 stainless steel	-46°C to -101°C
Type 304 stainless steel	-101°C to -196°C
Low alloys (carbon-moly and chrome alloys)	Over plus 454°C



PIPING MATERIALS	GF5050
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- 3.4 Other types of materials or alloys shall be used where corrosive conditions are the governing factor. API Std. 941, Steels for Hydrogen Service at Elevated Temperatures and Pressures in Petroleum Refineries and Petrochemical Plants (the Nelson curves), shall be used for selecting materials for piping in hydrogen service.
- 3.5 All piping materials shall meet the impact requirements of ANSI B31.3. When Charpy V-notch testing is a requirement, it shall be conducted in accordance with ASTM Standard A370 at a test temperature 5°C below the minimum design temperature. A minimum average absorbed energy for each set of three full size Charpy specimens shall be 17.6 joules with no individual impact value below 13.6 joules.

#### 4.0 PIPE

- 4.1 Pipe shall normally be as specified in the Piping Material Specification for the applicable Piping Class Rating and Service.
- 4.2 Piping for service below -29°C and above 649°C shall be approved in writing by OWNER.

#### 4.3 Seamless Pipe

The following materials shall normally be used. Other materials may be used if approved in writing by OWNER.

<u>Material</u>	<u>Specification</u>	<u>Temperature (°C)</u>	
		<u>Minimum</u>	<u>Maximum</u>
Carbon Steel	A-53 Gr. B	-29 *	426
	API-5L Gr. B	-29 *	426
	A-106 Gr. B	-29 *	426
	CSA Z245.1	-29	426
	A-333 Gr. 1	-45	426
	A-333 Gr. 6	-45	426
3-1/2% Ni	A-333 Gr. 3	-101	426
C-1/2 Mo	A-335 Gr. P1	-29	537
5 Cr-1/2 Mo	A-335 Gr. P5	-29	648
1-1/4 Cr-1/2 Mo	A-335 Gr. P11	-29	648
2-1/4 Cr-1 Mo	A-335 Gr. P22	-29	648
11-13 Cr	A-268 Gr. 405	-29	371
11-13 Cr	A-268 Gr. 410	-29	371
18 Cr-8 Ni	A-312 Type 304	-253	537





PIPING MATERIALS	GF5050
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Monel (Ni-Cu)	B-165	-198	260
Copper	B-68 (Annealed)	-269	204
	B-88 Type K (Annealed)	-269	204
19.5 Cr-6 Mo	A-312 Type 254SMO	-45	148

\* Pipe with nominal wall thickness greater than 12.7 mm must have the minimum design metal temperature (MDMT) increased per ASME B31.3 Fig. 323.2.2A. If -29°C MDMT is required, use A-333 Gr. 1 or Gr. 6 or impact tested material.

#### 4.4 Welded Pipe

The following materials shall normally be used. Other materials may be used if approved in writing by OWNER.

<u>Type</u>	<u>Material</u>	<u>Limitations</u>	<u>Specifications</u>
Butt Weld	Carbon Steel	65°C and 1034 kPag	API-5L Gr. B, A-53 Gr. B, or CSA Z245.1
Electric Resistance Weld (Non-Expanded)	Carbon Steel	426°C	API-5L Gr. B, A-53 Gr. B, or CSA Z245.1
Electric Resistance Weld (Cold Expanded)	Carbon Steel	204°C	API-5L Gr. B or CSA Z245.1
Electric Fusion Weld	Carbon Steel*	398°C	A-671 Class 2* or A-672
	Carbon Steel*	426°C	A-671 Class 1* or A-672
	18 Cr-8 Ni	537°C	A-312 Type 304
	19.5 Cr-6 Mo	148°C	A-312 Type 254SMO

\* Specify grade, class and longitudinal joint factor.

#### 4.5 Marking and Finish

Pipe shall be legibly marked in accordance with the applicable ASTM or API specification. In addition, the requirements of ASTM Standard Specification A-530 shall apply where it is referenced in the individual ASTM piping specification.





**PIPING MATERIALS**

**GF5050**

**4.6 Hardness of Pipe Material**

The maximum hardness of pipe with welded seams shall not exceed 225 BHN anywhere in the weld, heat-affected zone, or parent metal.

**5.0 VALVES**

- 5.1 Valves shall be provided in accordance with the Piping Material Specification for the applicable Piping Class Rating and Service and Specification GF5053, Valve Specifications.
- 5.2 No valves of brass, cast iron, ductile iron, nodular iron, or semi-steel; nor valves containing rubber, bronze or plastics shall be used unless specifically noted in the Piping Material Specification, GREENFIRE Specification GF5053 or a specific project directive.

**6.0 FLANGES**

- 6.1 Flanges shall be provided in accordance with the Piping Material Specification for the applicable Piping Class Rating and Service.
- 6.2 Flanges and flanged fittings shall comply with ASME B16.5 or ASME B16.47 (ASME B16.47 for >24" NPS unless with specific OWNER approval).
- 6.3 Only weld neck flanges shall be used unless otherwise specified by OWNER. In ANSI 900 and higher ratings, RTJ flanges are recommended except in salt water or other corrosive service where they shall not be used. Raised face flanges may be used for ease of fit up and installation and removal of valves and equipment with OWNER approval.

**7.0 FITTINGS**

- 7.1 Fittings shall be provided in accordance with the Piping Material Specification for the applicable Piping Class Rating and Service.
- 7.2 Fittings shall conform to ASTM A-234 or A-420.
- 7.3 Branch Connections using welding tees or commercial integrally reinforced fittings such as weldolets, sockolets (forged only) or socketweld couplings are equally acceptable, with the choice of the type of connection based on the criteria provided by the Branch Connection Tables contained in Appendix B.



**PIPING MATERIALS**

**GF5050**

**8.0 SMALL SIZE CONNECTIONS**

- 8.1 The minimum thickness of small size connections to all lines, vessels and equipment, up to the first block valve ("nipple"), regardless of where the block valve is located, shall be as specified by the Piping Material Specification for the applicable Piping Class Rating and Service. Except as noted in Paragraph 8.2, this will be Schedule 160 and includes any branch connection in a piping system of either welded or screwed construction. This includes branch connections to branch lines as well as to main lines.
- 8.2 Small size connections in the following cases are excluded from the requirements of Paragraph 8.1:
- Connections to low pressure utility systems, such as water and atmospheric drains.
  - Instrument and utility air piping.

**9.0 BOLTING**

- 9.1 Flange bolting shall be provided in accordance with the Piping Material Specification for the applicable Piping Class Rating and Service.
- 9.2 Bolting for temperatures -29°C to 482°C shall be A -193 Grade B-7 with A194 Grade 2H nuts and for temperatures 482°C to 593°C shall be A-193 Grade B-16 with A194 Grade 2HM nuts.
- 9.3 Materials for use below -29°C and above 593°C shall be approved in writing by OWNER unless otherwise specified in supplementary specifications.
- 9.4 Studs shall be threaded full length.
- 9.5 Threads on stud bolts and nuts under 1" diameter shall be coarse thread series. Larger diameter studs shall have Unified 8 Class 2A threads. Nuts shall have Class 2B threads.
- 9.6 The stud length shall be selected so when nuts are fully engaged the stud projects beyond the nuts but not more than two full threads.

**10.0 GASKETS**

- 10.1 Gaskets shall be provided in accordance with the Piping Material Specification for the applicable Piping Class Rating and Service.
- 10.2 Materials for use below -29°C and above 645°C shall be approved by OWNER.



<b>PIPING MATERIALS</b>	<b>GF5050</b>
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- 10.3 Jackets of double jacketed gaskets shall be Armco Iron or soft carbon steel, Flexitallic or equal, unless otherwise specified.
- 10.4 Unless approved otherwise, spiral wound gaskets for raised face connections shall be Lamons, type WRI for ALL piping classes. Gaskets shall have a solid 316 inner ring, flexible graphite filler material, and a solid steel outer ring.
- 10.5 Ring joint gaskets shall be soft iron of 90 BHN maximum for sweet service and 316 SS in sour service piping.
- 10.6 Where alloy flanges are used or flanges faced with an alloy, the rings may be the same material as the flange or flange facing.
- 10.7 A minimum difference of 50 BHN shall be maintained between flange facings and rings, with the ring being the softer material.
- 10.8 Where required for corrosive conditions, materials other than those listed in the Pipe Material Specification may be used where approved by OWNER.

## **11.0 SOUR SERVICE PIPING**

- 11.1 A sour environment shall be defined as follows:

The system being handled is at a total pressure of 448 kPa (abs) or greater and the partial pressure of H<sub>2</sub>S in the gas is greater than 0.3 kPa (abs). Systems operating below 448 kPa (abs) total pressure or below 0.3 kPa (abs) H<sub>2</sub>S partial pressure shall be considered sweet.

- 11.2 The above definitions are adopted from NACE Standard MR-01-75 and provide a convenient means of determining the limits of sweet vs. sour service.
- 11.3 GREENFIRE Specification GF5051 shall be used in conjunction with this specification when systems fall within the definition of sour environments.

## **12.0 LOW TEMPERATURE SERVICE**

- 12.1 Environments with temperature below -29°C shall be defined as low temperature. A generalized material selection guide is included in subsection 3.3 of this specification.
- 12.2 GREENFIRE Specification GF5052 shall be used in conjunction with this specification when systems fall within the definition of low temperature service.



**GREENFIRE OIL AND GAS LTD.**

***SPECIFICATIONS***

**PIPING MATERIALS**

**GF5050**

### **13.0 PIPING MATERIAL SPECIFICATIONS**

Appendix A provides details for the selection and limitations of piping materials for each piping class rating and service.



**GREENFIRE OIL AND GAS LTD.**

***SPECIFICATIONS***

**PIPING MATERIALS**

**GF5050**

## **APPENDIX A**

### **PIPING MATERIAL SPECIFICATIONS**





PIPING MATERIALS	GF5050
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**INDEX FOR PIPING CLASS RATING AND SERVICE**

PIPING CLASS	ANSI RATING	SERVICE	TEMPERATURE RANGE (°C)	GENERAL MATERIAL
AA BA CA DA	150 RF 300 RF 600 RF 900 RF	Sweet Hydrocarbons, Produced Water, Glycol, Methanol, Propane Refrigerant, Fuel Gas, Air, Process Drain and Relief Systems	-29 to 250	CS (Gr 1.1)
AL BL CL	150 RF 300 RF 600 RF	Low Temperature Sweet Hydrocarbons, Produced Water, Glycol, Methanol, Propane Refrigerant, Fuel Gas, Air, Process Drain and Relief Systems	-45 to 250	CS (Gr 1.1)
AS BS CS	150 RF 300 RF 600 RF	Sour Hydrocarbons, Produced Water, Rich and Lean Amine, Process Drain and Relief Systems	-29 to 250	CS (Gr 1.1)
AH BH CH DH	150 RF 300 RF 600 RF 900 RTJ	Hot Water, Steam, Hot Bitumen, Hot Hydrocarbon Vapour	-29 to 378	CS (Gr 1.1)
AR2	150 RF	Corrosive Chemicals	-45 to 148	SS 316 (Gr 2.2)
A6 SP1	150 RF 150 RF	Concentrated Brackish Water Low Pressure Steam	-45 to 148 -45 to 148	6% Moly SS 304 (Gr 2.2)
AZ	150 RF	0 to 40% Hydrochloric Acid (HCl), 35% Brine (NaCl)	-18 to 105 (acid) -18 to 117 (brine)	CS (Gr 1.1) with PTFE liner
AV1	150 FF	Water treatment, 20% Hydrochloric Acid and HCL acid vent lines	+10 to 48	PVC
APR	150 FF	Hydrochloric acid (35% wt. Max)	-29 to 60	FRP



<b>PIPING MATERIALS</b>	<b>GF5050</b>
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**CLASS AA**

<b>PRIMARY SERVICE RATING:</b>	<b>ANSI 150</b>	<b>TEMPERATURE LIMITS:</b>	<b>-29°C TO 250°C(4)</b>
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<b>SERVICE :</b>	Sweet Hydrocarbons, Produced Water, Glycol, Methanol, Propane Refrigerant, Fuel Gas, Air, Process Drain and Relief Systems	<b>MATERIAL GROUP:</b>	Carbon Steel Group 1.1
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<b>DESIGN CODE:</b>	ASME B31.3	<b>CORROSION ALLOWANCE:</b>	1.6 mm
<b>PRESSURE:</b>	1965 kPag @ 38°C (285 psig @ 100°F)	<b>STRESS RELIEF:</b>	All Welds Over 19 mm (0.75") Wall Thickness.
<b>TEMPERATURE :</b>	Per ANSI B16.5 For Higher Temp		
<b>RADIOGRAPHY :</b>	5% Of All Butt Welds To Be 100% Radiographed		

SIZE RANGE INCHES NPS	1/2" TO 2"	3" TO 10"	12" AND UP	NOTES
<b>SCHEDULE</b>	80	40	Calculate	1
<b>PIPE</b>	A-106 Gr. B, Smls	A-106 Gr. B, Smls	A-106 Gr. B, Smls	
<b>FITTINGS:</b>				1
<b>BUTT WELD</b>	A-234 Gr. WPB	A-234 Gr. WPB	A-234 Gr. WPB	
<b>S.W. &amp; SCREWED</b>	A-105, 3000#, F.S.	Not Allowed	Not Allowed	2, 5
<b>UNIONS</b>	3000#, F.S., A-105 GJ Integral Steel Seat			2, 5
<b>O'LETS</b>	3000#, F.S. (S.W. or Scr'd), SCH To Match Pipe (BW), A-105N			5
<b>SWAGES</b>	A-106 Gr. B, Smls, SCH to match pipe			1
<b>NIPPLES</b>	A-106 Gr. B, Smls, SCH to match pipe			1
<b>FLANGES</b>	ANSI 150 RFWN, A-105N			3
<b>ORIFICE FLGS</b>	ANSI 300 RFWN, A-105N			
<b>GASKETS</b>	Spiral wound, Lamons, type WRI, 316 c/w solid inner & outer rings, graphite filler			
<b>STUDS</b>	A-193 Gr. B7			
<b>NUTS</b>	A-194 Gr. 2H			

- NOTES: 1. 12" & Up Minimum Wall Thickness 9.525 mm (0.375"). For Branch Connections Refer to Paragraph 8.0.
2. 2" & Larger Use Flanges.
3. With OWNER Approval, Flanges 1/2" To 1 1/2" May Be R.F. Socket Weld.
4. MDMT For Nominal Wall Thickness Greater Than 13 mm (0.5") Must Be Increased Per ANSI B31.3, Figure 23.2.2 Curve B.



PIPING MATERIALS	GF5050
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5. Unless otherwise approved by Owner, socket weld connections shall be used instead of threaded connections, except for Utility / Instrument Air service.

### CLASS AA (CONT'D)

PRIMARY SERVICE RATING: ANSI 150      TEMPERATURE LIMITS: -29°C TO 250°C

**VALVES:** Refer To GHOPCO Specification GF5053, Valve Specifications, For Details Of The Following Valve Designations.

SIZE	GATE	GLOBE	BALL (1)	CHECK	NEEDLE
1/2" - 1 1/2" S.W.	GA-2080	GL-2080	BA-2060	CH-2080	--
1/2" - 1 1/2" Scr'd <sup>(2,3)</sup>	GA-3080	GL-3080	BA-3060	CH-3080	NE-3600
1/2" - 1 1/2" S.W. x NPT	GA-5080	GL-5080	BA-5060	--	--
2"	GA-1010	GL-1010	BA-1010	CH-1010	--
3"	GA-1010	GL-1010	BA-1010	CH-1010	--
4"	GA-1010	GL-1010	BA-1010	CH-1010	--
6"	GA-1010	GL-1010	BA-1010X	CH-1010	--
8"	GA-1010	Use Gate	BA-1010GX	CH-1010	--
10"	GA-1010	Use Gate	BA-1010GX	CH-1010	--
12"	GA-1010G	Use Gate	BA-1010GX	CH-1010	--
14" & Up	GA-1010G	Use Gate	BA-1010G	CH-1010	--

**NOTES:**

1. Unless otherwise approved by Owner, socket weld connections shall be used instead of threaded connections, except for Utility / Instrument Air service.
2. To provide positive isolation from the main header, and to avoid spinning of the valve during maintenance, all root valves shall have the upstream end seal welded or socket welded.





PIPING MATERIALS	GF5050
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## CLASS BA

<b>PRIMARY SERVICE RATING:</b>	ANSI 300	<b>TEMPERATURE LIMITS:</b>	-29°C TO 250°C (5)
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<b>SERVICE :</b>	Sweet Hydrocarbons, Produced Water, Glycol, Methanol, Propane Refrigerant, Fuel Gas, Air, Process Drain and Relief Systems	<b>MATERIAL GROUP:</b>	Carbon Steel Group 1.1
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<b>DESIGN CODE:</b>	ASME B31.3	<b>CORROSION ALLOWANCE:</b>	1.6 mm
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<b>PRESSURE:</b>	5100 kPag @ 38°C (740 psig @ 100°F)	<b>STRESS RELIEF:</b>	All Welds Over 19 mm (0.75") Wall Thickness.
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<b>TEMPERATURE :</b>	Per ANSI B16.5 For Higher Temp		
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<b>RADIOGRAPHY :</b>	10% Of All Butt Welds To Be 100% Radiographed
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SIZE RANGE INCHES NPS	1/2" TO 2"	3" TO 10"	12" AND UP	NOTES
<b>SCHEDULE</b>	160 $\leq \frac{3}{4}$ " < 80	40	Calculate	1, 2
<b>PIPE</b>	A-106 Gr. B, Smls	A-106 Gr. B, Smls	A-106 Gr. B, Smls	
<b>FITTINGS:</b>				1, 2
<b>BUTT WELD</b>	A-234 Gr. WPB	A-234 Gr. WPB	A-234 Gr. WPB	
<b>S.W.</b>	A-105, 3000#, F.S.	Not Allowed	Not Allowed	3, 6
<b>UNIONS</b>	3000#, F.S., A-105 GJ Integral Steel Seat			3, 6
<b>O'LETS</b>	3000#, F.S., SCH To Match Pipe (BW), A-105N			6
<b>SWAGES</b>	A-106 Gr. B, Smls, SCH to match pipe			1, 2
<b>NIPPLES</b>	A-106 Gr. B, Smls, SCH to match pipe			1, 2
<b>FLANGES</b>	ANSI 300 RFWN, A-105N			4
<b>ORIFICE FLGS</b>	ANSI 300 RFWN, A-105N			
<b>GASKETS</b>	Spiral wound, Lamons, type WRI, 316 c/w solid inner & outer rings, graphite filler			
<b>STUDS</b>	A-193 Gr. B7			
<b>NUTS</b>	A-194 Gr. 2H			

- NOTES: 1. For Branch Connections Refer to Paragraph 8.0.  
 2. 12" & Up Minimum Wall Thickness 9.525 mm (0.375").  
 3. 2" & Larger Use Flanges.  
 4. With OWNER Approval, Flanges 1/2" To 1 1/2" May Be R.F. Socket Weld.  
 5. MDMT For Nominal Wall Thickness Greater Than 13 mm (0.5") Must Be Increased Per ANSI



PIPING MATERIALS	GF5050
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B31.3, Figure 323.2.2 Curve B.

6. Unless otherwise approved by Owner, socket weld connections shall be used instead of threaded connections, except for Utility / Instrument Air service.

**CLASS BA (CONT'D)**

PRIMARY SERVICE RATING: ANSI 300      TEMPERATURE LIMITS: -29°C TO 250°C

VALVES: Refer To GHOPCO Specification GF5053, Valve Specifications, For Details Of The Following Valve Designations.

SIZE	GATE	GLOBE	BALL (1)	CHECK	NEEDLE
1/2" - 1 1/2" S.W.	GA-2080	GL-2080	BA-2060	CH-2080	--
1/2" - 1 1/2" Scr'd <sup>(2)</sup>	GA-3080	GL-3080	BA-3060	CH-3080	NE-3600
1/2" - 1 1/2" S.W. x NPT	GA-5080	GL-5080	BA-5060	--	--
2"	GA-1030	GL-1030	BA-1030	CH-1030	--
3"	GA-1030	GL-1030	BA-1030	CH-1030	--
4"	GA-1030	GL-1030	BA-1030	CH-1030	--
6"	GA-1030	GL-1030	BA-1030	CH-1030	--
8"	GA-1030	Use Gate	BA-1030GX	CH-1030	--
10"	GA-1030	Use Gate	BA-1030GX	CH-1030	--
12"	GA-1030G	Use Gate	BA-1030GX	CH-1030	--
14" & Up	GA-1030G	Use Gate	BA-1030G	CH-1030	--

NOTES:

1. Unless otherwise approved by Owner, socket weld connections shall be used instead of threaded connections, except for Utility / Instrument Air service.





# GREENFIRE OIL AND GAS LTD.

## SPECIFICATIONS

PIPING MATERIALS	GF5050
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### CLASS CA

<b>PRIMARY SERVICE RATING:</b>	ANSI 600	<b>TEMPERATURE LIMITS:</b>	-29°C TO 250°C (4)
<b>SERVICE :</b>	Sweet Hydrocarbons, Produced Water, Glycol, Methanol, Propane Refrigerant, Fuel Gas, Air, Process Drain and Relief Systems	<b>MATERIAL GROUP:</b>	Carbon Steel Group 1.1
<b>DESIGN CODE:</b>	ASME B31.3	<b>CORROSION ALLOWANCE:</b>	1.6 mm
<b>PRESSURE:</b>	10,200 kPag @ 38°C (1,480 psig @ 100°F)	<b>STRESS RELIEF:</b>	All Welds Over 19 mm (0.75") Wall Thickness.
<b>TEMPERATURE :</b>	Per ANSI B16.5 For Higher Temp		
<b>RADIOGRAPHY :</b>	10% Of All Butt Welds To Be 100% Radiographed		

SIZE RANGE INCHES NPS	1/2" TO 2"	3" TO 8"	10" AND UP	NOTES
<b>SCHEDULE</b>	160 $\leq \frac{3}{4}$ " < 80	3" = 40, Others = 80	Calculate	1
<b>PIPE</b>	A-106 Gr.B, Smls	A-106 Gr.B Smls	A-106 Gr.B Smls	
<b>FITTINGS:</b>				1
<b>BUTT WELD</b>	A-234 Gr. WPB	A-234 Gr. WPB	A-234 Gr. WPB	
<b>S.W.</b>	A-105, 3000#, F.S.	Not Allowed	Not Allowed	2, 5
<b>UNIONS</b>	3000#, F.S., A-105 GJ Integral Steel Seat			2, 5
<b>O'LETS</b>	3000#, F.S., SCH To Match Pipe (BW), A-105N			5
<b>SWAGES</b>	A-106 Gr. B, Smls, SCH to match pipe			1
<b>NIPPLES</b>	A-106 Gr. B, Smls, SCH to match pipe			1
<b>FLANGES</b>	ANSI 600 RFWN, A-105N			3
<b>ORIFICE FLGS</b>	ANSI 600 RFWN, A-105N			
<b>GASKETS</b>	Spiral wound, Lamons, type WRI, 316 c/w solid inner & outer rings, graphite filler			
<b>STUDS</b>	A-193 Gr. B7			
<b>NUTS</b>	A-194 Gr. 2H			

- NOTES: 1. For Branch Connections Refer to Paragraph 8.0.  
2. 2" & Larger Use Flanges.  
3. With OWNER Approval, Flanges 1/2" To 1 1/2" May Be R.F. Socket Weld.  
4. MDMT For Nominal Wall Thickness Greater Than 13 mm (0.5") Must Be Increased Per ANSI B31.3, Figure 323.2.2 Curve B.



PIPING MATERIALS	GF5050
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5. Unless otherwise approved by Owner, socket weld connections shall be used instead of threaded connections, except for Utility / Instrument Air service.

**CLASS CA (CONT'D)**

PRIMARY SERVICE RATING: ANSI 600      TEMPERATURE LIMITS: -29°C TO 250°C

VALVES: Refer To GHOPCO Specification GF5053, Valve Specifications, For Details Of The Following Valve Designations.

SIZE	GATE	GLOBE	BALL	CHECK	NEEDLE
1/2" - 1 1/2" S.W.	GA-2080	GL-2080	BA-2060	CH-2080	--
1/2" - 1 1/2" Scr'd <sup>(1)</sup>	GA-3080	GL-3080	BA-3060	CH-3080	NE-3600
1/2" - 1 1/2" S.W. x NPT	GA-5080	GL-5080	BA-5060	--	--
2"	GA-1060	GL-1060	BA-1060	CH-1060	--
3"	GA-1060	GL-1060	BA-1060	CH-1060	--
4"	GA-1060	GL-1060	BA-1060	CH-1060	--
6"	GA-1060	GL-1060	BA-1060GM	CH-1060	--
8"	GA-1060G	Use Gate	BA-1060GM	CH-1060	--
10"	GA-1060G	Use Gate	BA-1060GM	CH-1060	--
12"	GA-1060G	Use Gate	BA-1060GM	CH-1060	--
14" & Up	GA-1060G	Use Gate	BA-1060GM	CH-1060	--

**NOTE:**

1. Unless otherwise approved by Owner, socket weld connections shall be used instead of threaded connections, except for Utility / Instrument Air service.



<b>PIPING MATERIALS</b>	<b>GF5050</b>
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**CLASS DA**

<b>PRIMARY SERVICE RATING:</b>	ANSI 900	<b>TEMPERATURE LIMITS:</b>	-29°C TO 250°C (4)
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<b>SERVICE :</b>	Sweet Hydrocarbons, Produced Water, Glycol, Methanol, Propane Refrigerant, Fuel Gas, Air, Process Drain and Relief Systems	<b>MATERIAL GROUP:</b>	Carbon Steel Group 1.1
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<b>DESIGN CODE:</b>	ASME B31.3	<b>CORROSION ALLOWANCE:</b>	1.6 mm
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<b>PRESSURE:</b>	15,300 kPag @ 38°C (2,220 psig @ 100°F)	<b>STRESS RELIEF:</b>	All Welds Over 19 mm (0.75") Wall Thickness.
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<b>TEMPERATURE :</b>	Per ANSI B16.5 For Higher Temp		
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<b>RADIOGRAPHY :</b>	10% Of All Butt Welds To Be 100% Radiographed
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SIZE RANGE INCHES NPS	1/2" TO 1-1/2"	2" TO 8"	10" AND UP	NOTES
<b>SCHEDULE</b>	160	120	Calculate	1
<b>PIPE</b>	A-106 Gr.B, Smls	A-106 Gr.B Smls	A-106 Gr.B Smls	
<b>FITTINGS:</b>				1
<b>BUTT WELD</b>	A-234 Gr. WPB	A-234 Gr. WPB	A-234 Gr. WPB	
<b>S.W.</b>	A-105, 6000#, F.S.	Not Allowed	Not Allowed	5
<b>UNIONS</b>	6000#, F.S., A-105 GJ Integral Steel Seat			2, 5
<b>O'LETS</b>	6000#, F.S., SCH To Match Pipe (BW), A-105N			5
<b>SWAGES</b>	A-106 Gr. B, Smls, SCH to match pipe			1
<b>NIPPLES</b>	A-106 Gr. B, Smls, SCH to match pipe			1
<b>FLANGES</b>	ANSI 900 RFWN, A-105N			3
<b>ORIFICE FLGS</b>	ANSI 900 RFWN, A-105N			
<b>GASKETS</b>	Spiral wound, Lamons, type WRI, 316 c/w solid inner & outer rings, graphite filler			
<b>STUDS</b>	A-193 Gr. B7			
<b>NUTS</b>	A-194 Gr. 2H			

**NOTES:**

1. For Branch Connections Refer to Paragraph 8.0.
2. 2" & Larger Use Flanges.
3. With OWNER Approval, Flanges 1/2" To 1 1/2" May Be R.F. Socket Weld.
4. MDMT For Nominal Wall Thickness Greater Than 13 mm (0.5") Must Be Increased Per ANSI B31.3, Figure 323.2.2 Curve B.



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***SPECIFICATIONS***

<b>PIPING MATERIALS</b>	<b>GF5050</b>
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5. Unless otherwise approved by Owner, socket weld connections shall be used instead of threaded connections, except for Utility / Instrument Air service.

**CLASS DA (CONT'D)**

**PRIMARY SERVICE RATING:** ANSI 900      **TEMPERATURE LIMITS:** -29°C TO 250°C

**VALVES:** Refer To GHOPCO Specification GF5053, Valve Specifications, For Details Of The Following Valve Designations.

SIZE	GATE	GLOBE	BALL	CHECK	NEEDLE
1/2" - 1 1/2" S.W.	GA-2150	GL-2150	--	CH-2150	--
1/2" - 1 1/2" Scr'd <sup>(1)</sup>	GA-3150	GL-3150	--	CH-3150	NE-3600
1/2" - 1 1/2" S.W. x NPT	GA-5150	GL-5150	--	--	--
2"	GA-1090	GL-1090	BA-1090	CH-1090	--
3"	GA-1090	GL-1090	BA-1090	CH-1090	--
4"	GA-1090	GL-1090	BA-1090	CH-1090	--
6"	GA-1090	GL-1090	BA-1090GM	CH-1090	--
8"	GA-1090G	Use Gate	BA-1090GM	CH-1090	--
10"	GA-1090G	Use Gate	BA-1090GM	CH-1090	--
12"	GA-1090G	Use Gate	BA-1090GM	CH-1090	--
14" & Up	GA-1090G	Use Gate	BA-1090GM	CH-1090	--

**NOTE:**

1. Unless otherwise approved by Owner, socket weld connections shall be used instead of threaded connections, except for Utility / Instrument Air service.





PIPING MATERIALS	GF5050
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### CLASS AL

<b>PRIMARY SERVICE RATING:</b> ANSI 150		<b>TEMPERATURE LIMITS:</b> -46°C TO 250°C	
<b>SERVICE:</b>	Low Temperature Sweet Hydrocarbons, Produced Water, Glycol, Methanol, Propane Refrigerant, Fuel Gas, Air, Process Drain and Relief Systems	<b>MATERIAL GROUP:</b>	Carbon Steel Group 1.1
<b>DESIGN CODE:</b>	ASME B31.3	<b>CORROSION ALLOWANCE:</b>	1.6 mm
<b>PRESSURE :</b>	1965 kPag @ 38°C (285 psig @ 100°F)	<b>STRESS RELIEF:</b>	Yes - Per GHOPCO Specification GF5052
<b>TEMPERATURE:</b>	Per ANSI B16.5 For Higher Temp		
<b>RADIOGRAPHY:</b>	100% Of All Butt Welds To Be 100% Radiographed		

SIZE RANGE INCHES NPS	1/2" TO 2"	3" TO 10"	12" AND UP	NOTES
<b>SCHEDULE</b>	80	40	Calculate	1
<b>PIPE</b>	A-333 Gr. 6, Smls	A-333 Gr. 6, Smls	A-333 Gr. 6, Smls	
<b>FITTINGS:</b>				1
<b>BUTT WELD</b>	A-420 Gr. WPL6	A-420 Gr. WPL6	A-420 Gr. WPL6	
<b>S.W.</b>	A-350 Gr. LF2, 3000#, F.S.	Not Allowed	Not Allowed	2, 4
<b>UNIONS</b>	3000#, F.S., A-350 Gr. LF2 GJ Integral Steel Seat			2, 4
<b>O'LETS</b>	3000#, F.S., SCH To Match Pipe (BW), A-350 Gr. LF2			4
<b>SWAGES</b>	A-333 Gr. 6, Smls, SCH to match pipe			1
<b>NIPPLES</b>	A-333 Gr. 6, Smls, SCH to match pipe			1
<b>FLANGES</b>	ANSI 150 RFWN, A-350 Gr. LF2			3
<b>ORIFICE FLGS</b>	ANSI 300 RFWN, A-350 Gr. LF2			
<b>GASKETS</b>	Spiral wound, Lamons, type WRI, 316 c/w solid inner & outer rings, graphite filler			
<b>STUDS</b>	A-320 Gr. L7M			
<b>NUTS</b>	A-194 Gr. 7M			

- NOTES: 1. 12" & Up Minimum Wall Thickness 9.525 mm (0.375"). For Branch Connections Refer to Paragraph 8.0.
2. 2" & Larger Use Flanges.
3. With OWNER Approval, Flanges 1/2" To 1 1/2" May Be R.F. Socket Weld.
4. Unless otherwise approved by Owner, socket weld connections shall be used instead of threaded connections, except for Utility / Instrument Air service.





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***SPECIFICATIONS***

<b>PIPING MATERIALS</b>	<b>GF5050</b>
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**CLASS AL (CONT'D)**

**PRIMARY SERVICE RATING:** ANSI 150      **TEMPERATURE LIMITS:** -46°C TO 250°C

**VALVES:** Refer To GHOPCO Specification GF5053, Valve Specifications, For Details Of The Following Valve Designations.

SIZE	GATE	GLOBE	BALL (2)	CHECK	NEEDLE (1)
1/2" - 1 1/2" S.W.	GA-2083	GL-2083	BA-2063	CH-2083	--
1/2" - 1 1/2" Scr'd <sup>(3)</sup>	GA-3083	GL-3083	BA-3063	CH-3083	NE-3603
1/2" - 1 1/2" S.W. x NPT	GA-5083	GL-5083	BA-5063	--	--
2"	GA-1013	GL-1013	BA-1013	CH-1013	--
3"	GA-1013	GL-1013	BA-1013	CH-1013	--
4"	GA-1013	GL-1013	BA-1013	CH-1013	--
6"	GA-1013	GL-1013	BA-1013X	CH-1013	--
8"	GA-1013	Use Gate	BA-1013GX	CH-1013	--
10"	GA-1013	Use Gate	BA-1013GX	CH-1013	--
12"	GA-1013G	Use Gate	BA-1013GX	CH-1013	--
14" & Up	GA-1013G	Use Gate	BA-1013G	CH-1013	--

- NOTES:**
1. Needle Valves 316 SS Bar Stock & Trim.
  2. Short Pattern Applies to Regular Port Valves Only.
  3. Unless otherwise approved by Owner, socket weld connections shall be used instead of threaded connections, except for Utility / Instrument Air service.



# GREENFIRE OIL AND GAS LTD.

## SPECIFICATIONS

PIPING MATERIALS	GF5050
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### CLASS BL

PRIMARY SERVICE RATING:	ANSI 300	TEMPERATURE LIMITS:	-46°C TO 250°C
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SERVICE :	Low Temperature Sweet Hydrocarbons, Produced Water, Glycol, Methanol, Propane Refrigerant, Fuel Gas, Air, Process Drain and Relief Systems	MATERIAL GROUP:	Carbon Steel Group 1.1
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DESIGN CODE:	ASME B31.3	CORROSION ALLOWANCE:	1.6 mm
PRESSURE :	5100 kPag @ 38°C (740 psig @ 100°F)	STRESS RELIEF:	Yes - Per GHOPCO Specification GF5052
TEMPERATURE :	Per ANSI B16.5 For Higher Temp		
RADIOGRAPHY :	100% Of All Butt Welds To Be 100% Radiographed		

SIZE RANGE INCHES NPS	1/2" TO 2"	3" TO 10"	12" AND UP	NOTES
SCHEDULE	160 < 3/4" < 80	40	Calculate	1, 2
PIPE	A-333 Gr. 6, Smls	A-333 Gr. 6, Smls	A-333 Gr. 6, Smls	
FITTINGS:				1, 2
BUTT WELD	A-420 Gr. WPL6	A-420 Gr. WPL6	A-420 Gr. WPL6	
S.W.	A-350 Gr. LF2, 3000#, F.S.	Not Allowed	Not Allowed	3, 5
UNIONS	3000#, F.S., A-350 Gr. LF2 GJ Integral Steel Seat			3, 5
O'LETS	3000#, F.S., SCH To Match Pipe (BW), A-350 Gr. LF2			5
SWAGES	A-333 Gr. 6, Smls, SCH to match pipe			1
NIPPLES	A-333 Gr. 6, Smls, SCH to match pipe			1
FLANGES	ANSI 300 RFWN, A-350 Gr. LF2			4
ORIFICE FLGS	ANSI 300 RFWN, A-350 Gr. LF2			
GASKETS	Spiral wound, Lamons, type WRI, 316 c/w solid inner & outer rings, graphite filler			
STUDS	A-320 Gr. L7M			
NUTS	A-194 Gr. 7M			

- NOTES: 1. For Branch Connections Refer to Paragraph 8.0.  
2. 12" & Up Minimum Wall Thickness 9.525 mm (0.375").  
3. 2" & Larger Use Flanges.



PIPING MATERIALS	GF5050
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4. With OWNER Approval, Flanges 1/2" To 1 1/2" May Be R.F. Socket Weld.
5. Unless otherwise approved by Owner, socket weld connections shall be used instead of threaded connections, except for Utility / Instrument Air service.

### CLASS BL (CONT'D)

PRIMARY SERVICE RATING: ANSI 300      TEMPERATURE LIMITS: -46°C TO 250°C

VALVES: Refer To GHOPCO Specification GF5053, Valve Specifications, For Details Of The Following Valve Designations.

SIZE	GATE	GLOBE	BALL (2)	CHECK	NEEDLE (1)
1/2" - 1 1/2" S.W.	GA-2083	GL-2083	BA-2063	CH-2083	--
1/2" - 1 1/2" Scr'd <sup>(3)</sup>	GA-3083L	GL-3083	BA-3063	CH-3083	NE-3603
1/2" - 1 1/2" S.W. x NPT	GA-5083	GL-5083	BA-5063	--	--
2"	GA-1033	GL-1033	BA-1033	CH-1033	--
3"	GA-1033	GL-1033	BA-1033	CH-1033	--
4"	GA-1033	GL-1033	BA-1033	CH-1033	--
6"	GA-1033	GL-1033	BA-1033	CH-1033	--
8"	GA-1033	Use Gate	BA-1033GX	CH-1033	--
10"	GA-1033	Use Gate	BA-1033GX	CH-1033	--
12"	GA-1033G	Use Gate	BA-1033GX	CH-1033	--
14" & Up	GA-1033G	Use Gate	BA-1033G	CH-1033	--

- NOTES:
1. Needle Valves 316 SS Bar Stock & Trim.
  2. Short Pattern Applies to Regular Port Valves Only.
  3. Unless otherwise approved by Owner, socket weld connections shall be used instead of threaded connections, except for Utility / Instrument Air service.



<b>PIPING MATERIALS</b>	<b>GF5050</b>
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**CLASS CL**

**PRIMARY SERVICE**                      **ANSI 600**                      **TEMPERATURE LIMITS:** -46°C TO 260°C  
**RATING:**

<b>SERVICE</b> :	Low Temperature Sweet Hydrocarbons, Produced Water, Glycol, Methanol, Propane Refrigerant, Fuel Gas, Air, Process Drain and Relief Systems	<b>MATERIAL</b> <b>GROUP:</b>	Carbon Steel Group 1.1
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<b>DESIGN CODE:</b>	ASME B31.3	<b>CORROSION ALLOWANCE:</b>	1.6 mm
<b>PRESSURE :</b>	10,200 kPag @ 38°C (1480 psig @ 100°F)	<b>STRESS</b>	Yes - Per
<b>TEMPERATURE</b> :	Per ANSI B16.5 For Higher Temp	<b>RELIEF:</b>	GHOPCO Specification GF5052

**RADIOGRAPHY**    100% Of All Butt Welds To Be 100% Radiographed  
:

SIZE RANGE INCHES NPS	1/2" TO 1-1/2"	2" TO 8"	10" AND UP	NOTES
<b>SCHEDULE</b>	160	3" = 40, Others = 80	Calculate	1
<b>PIPE</b>	A-333 Gr. 6, Smls	A-333 Gr. 6, Smls	A-333 Gr. 6, Smls	
<b>FITTINGS:</b>				1
<b>BUTT WELD</b>	A-420 Gr. WPL6	A-420 Gr. WPL6	A-420 Gr. WPL6	
<b>S.W.</b>	A-350 Gr. LF2, 3000#, F.S.	Not Allowed	Not Allowed	4
<b>UNIONS</b>	3000#, F.S., A-350 Gr. LF2 GJ Integral Steel Seat			2, 4
<b>O'LETS</b>	3000#, F.S., SCH To Match Pipe (BW), A-350 Gr. LF2			4
<b>SWAGES</b>	A-333 Gr. 6, Smls, SCH to match pipe			1
<b>NIPPLES</b>	A-333 Gr. 6, Smls, SCH to match pipe			1
<b>FLANGES</b>	ANSI 600 RFWN, A-350 Gr. LF2			3
<b>ORIFICE FLGS</b>	ANSI 600 RFWN, A-350 Gr. LF2			
<b>GASKETS</b>	Spiral wound, Lamons, type WRI, 316 c/w solid inner & outer rings, graphite filler			
<b>STUDS</b>	A-320Gr. L7M			
<b>NUTS</b>	A-194 Gr. 7M			

- NOTES:**
1. For Branch Connections Refer to Paragraph 8.0.
  2. 2" & Larger Use Flanges.
  3. With OWNER Approval, Flanges 1/2" To 1 1/2" May Be R.F. Socket Weld.





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## SPECIFICATIONS

PIPING MATERIALS	GF5050
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4. Unless otherwise approved by Owner, socket weld connections shall be used instead of threaded connections, except for Utility / Instrument Air service.

### CLASS CL (CONT'D)

PRIMARY SERVICE RATING: ANSI 600 TEMPERATURE LIMITS: -46°C TO 260°C

VALVES: Refer To General Specification 5053, Valve Specifications, For Details Of The Following Valve Designations.

SIZE	GATE	GLOBE	BALL	CHECK	NEEDLE (1)
1/2" - 1 1/2" S.W.	GA-2083	GL-2083	BA-2063	CH-2083	--
1/2" - 1 1/2" Scr'd <sup>(2)</sup>	GA-3083L	GL-3083	BA-3063	CH-3083	NE-3603
1/2" - 1 1/2" S.W. x NPT	GA-5083	GL-5083	BA-5063	--	--
2"	GA-1063	GL-1063	BA-1063	CH-1063	--
3"	GA-1063	GL-1063	BA-1063	CH-1063	--
4"	GA-1063	GL-1063	BA-1063	CH-1063	--
6"	GA-1063	GL-1063	BA-1063	CH-1063	--
8"	GA-1063G	Use Gate	BA-1063GM	CH-1063	--
10"	GA-1063G	Use Gate	BA-1063GM	CH-1063	--
12"	GA-1063G	Use Gate	BA-1063GM	CH-1063	--
14" & Up	GA-1063G	Use Gate	BA-610LGM	CH-1063	--

- NOTE:
1. Needle Valves 316 SS Bar Stock & Trim.
  2. Unless otherwise approved by Owner, socket weld connections shall be used instead of threaded connections, except for Utility / Instrument Air service.





<b>PIPING MATERIALS</b>	<b>GF5050</b>
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**CLASS AS**

<b>PRIMARY SERVICE RATING:</b>	<b>ANSI 150</b>	<b>TEMPERATURE LIMITS:</b>	<b>-29°C TO 250°C (4)</b>
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<b>SERVICE :</b>	Sour Hydrocarbons, Produced Water, Rich and Lean Amine, Process Drain and Relief Systems	<b>MATERIAL GROUP:</b>	Carbon Steel Group 1.1
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<b>DESIGN CODE:</b>	ASME B31.3	<b>CORROSION ALLOWANCE:</b>	3.2 mm
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<b>PRESSURE :</b>	1965 kPag @ 38°C (285 psig @ 100°F)	<b>STRESS RELIEF:</b>	Yes - Per GHOPCO Specification GF5051
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<b>TEMPERATURE :</b>	Per ANSI B16.5 For Higher Temp		
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<b>RADIOGRAPHY :</b>	100% Of All Butt Welds To Be 100% Radiographed
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SIZE RANGE INCHES NPS	1/2" TO 1-1/2"	2" TO 10"	12" AND UP	NOTES
<b>SCHEDULE</b>	160	2" = 80, Others = 40	Calculate	1
<b>PIPE</b>	A-106 Gr. B, Smls	A-106 Gr. B, Smls	A-106 Gr. B, Smls	
<b>FITTINGS:</b>				1
<b>BUTT WELD</b>	A-234 Gr. WPB	A-234 Gr. WPB	A-234 Gr. WPB	
<b>S.W.</b>	A-105, 3000#, F.S.	Not Allowed	Not Allowed	5
<b>UNIONS</b>	3000#, F.S., A-105 GJ Integral Steel Seat			2, 5
<b>O'LETS</b>	3000#, F.S., SCH To Match Pipe (BW), A-105N			5
<b>SWAGES</b>	A-106 Gr. B, Smls., SCH to match pipe			
<b>NIPPLES</b>	A-106 Gr. B, Smls., SCH to match pipe			
<b>FLANGES</b>	ANSI 150 RFWN, A-105N			3
<b>ORIFICE FLGS</b>	ANSI 300 RFWN, A-105N			
<b>GASKETS</b>	Spiral wound, Lamons, type WRI, 316 c/w solid inner & outer rings, graphite filler			
<b>STUDS</b>	A-193 Gr. B7M			
<b>NUTS</b>	A-194 Gr. 2HM			

- NOTES:**
- 12" & Up Minimum Wall Thickness 9.525 mm (0.375"). For Branch Connections Refer to Paragraph 8.0.
  - 2" & Larger Use Flanges.
  - With OWNER Approval, Flanges 1/2" To 1 1/2" May Be R.F. Socket Weld.
  - MDMT For Nominal Wall Thickness Greater Than 13 mm (0.5") Must Be Increased Per ANSI B31.3 Figure 323.2.2 Curve B.



**PIPING MATERIALS**

**GF5050**

5. Unless otherwise approved by Owner, socket weld connections shall be used instead of threaded connections, except for Utility / Instrument Air service.

**CLASS AS (CONT'D)**

**PRIMARY SERVICE RATING:** ANSI 150

**TEMPERATURE LIMITS:** -29°C TO 250°C

**VALVES:** Refer To GHOPCO Specification GF5053, Valve Specifications, For Details Of The Following Valve Designations.

SIZE	GATE	GLOBE	BALL (2)	CHECK	NEEDLE (1)
1/2" - 1 1/2" S.W.	GA-2082	GL-2082	BA-2062	CH-2082	--
1/2" - 1 1/2" Scr'd <sup>(3)</sup>	GA-3082	GL-3082	BA-3062	CH-3082	NE-3602
1/2" - 1 1/2" S.W. x NPT	GA-5082	GL-5082	BA-5062	--	--
2"	GA-1012	GL-1012	BA-1012	CH-1012	--
3"	GA-1012	GL-1012	BA-1012	CH-1012	--
4"	GA-1012	GL-1012	BA-1012	CH-1012	--
6"	GA-1012	GL-1012	BA-1012X	CH-1012	--
8"	GA-1012	Use Gate	BA-1012GX	CH-1012	--
10"	GA-1012	Use Gate	BA-1012GX	CH-1012	--
12"	GA-1012G	Use Gate	BA-1012GX	CH-1012	--
14" & Up	GA-1012G	Use Gate	BA-1012G	CH-1012	--

- NOTES:**
1. Needle Valves 316 SS Bar Stock & Trim.
  2. Short Pattern Applies to Regular Port Valves Only.
  3. Unless otherwise approved by Owner, socket weld connections shall be used instead of threaded connections, except for Utility / Instrument Air service.



PIPING MATERIALS	GF5050
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### CLASS BS

<b>PRIMARY SERVICE RATING:</b>	ANSI 300	<b>TEMPERATURE LIMITS:</b>	-29°C TO 250°C (5)
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<b>SERVICE :</b>	Sour Hydrocarbons, Produced Water, Rich and Lean Amine, Process Drain and Relief Systems	<b>MATERIAL GROUP:</b>	Carbon Steel Group 1.1
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<b>DESIGN CODE:</b>	ASME B31.3	<b>CORROSION ALLOWANCE:</b>	3.2 mm
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<b>PRESSURE :</b>	5100 kPag @ 38°C (740 psig @ 100°F)	<b>STRESS RELIEF:</b>	Yes - Per GHOPCO Specification GF5051
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<b>TEMPERATURE :</b>	Per ANSI B16.5 For Higher Temp		
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<b>RADIOGRAPHY :</b>	100% Of All Butt Welds To Be 100% Radiographed		
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SIZE RANGE INCHES NPS	1/2" TO 1-1/2"	2" TO 8"	10" AND UP	NOTES
<b>SCHEDULE PIPE</b>	XXS $\leq \frac{3}{4}" < 160$	80	Calculate	1, 2
<b>FITTINGS:</b>	A-106 Gr. B, Smls	A-106 Gr. B, Smls	A-106 Gr. B, Smls	1
<b>BUTT WELD S.W.</b>	A-234 Gr. WPB A-105, F.S. $6000\# \leq \frac{3}{4}" < 3000\#$	A-234 Gr. WPB Not Allowed	A-234 Gr. WPB Not Allowed	6
<b>UNIONS</b>	$6000\# \leq \frac{3}{4}" < 3000\#$ , F.S., A-105 GJ Integral Steel Seat			3, 6
<b>O'LETS</b>	$6000\# \leq \frac{3}{4}" < 3000\#$ , F.S., SCH To Match Pipe (BW), A-105N			6
<b>SWAGES</b>	A-106 Gr. B, Smls., SCH to match pipe			1
<b>NIPPLES</b>	A-106 Gr. B, Smls., SCH to match pipe			1
<b>FLANGES</b>	ANSI 300 RFWN, A-105N			4
<b>ORIFICE FLGS</b>	ANSI 300 RFWN, A-105N			
<b>GASKETS</b>	Spiral wound, Lamons, type WRI, 316 c/w solid inner & outer rings, graphite filler			
<b>STUDS</b>	A-193 Gr. B7M			
<b>NUTS</b>	A-194 Gr. 2HM			

- NOTES: 1. For Branch Connections Refer to Paragraph 8.0.  
 2. 12" & Up Minimum Wall Thickness 9.525 mm (0.375").  
 3. 2" & Larger Use Flanges.  
 4. With OWNER Approval, Flanges 1/2" To 1 1/2" May Be R.F. Socket Weld.



# GREENFIRE OIL AND GAS LTD.

## SPECIFICATIONS

PIPING MATERIALS	GF5050
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- MDMT For Nominal Wall Thickness Greater Than 13 mm (0.5") Must Be Increased Per ANSI B31.3 Figure 323.2.2 Curve B.
- Unless otherwise approved by Owner, socket weld connections shall be used instead of threaded connections, except for Utility / Instrument Air service.

### CLASS BS (CONT'D)

PRIMARY SERVICE RATING: ANSI 300      TEMPERATURE LIMITS: -29°C TO 250°C

VALVES: Refer To GHOPCO Specification GF5053, Valve Specifications, For Details Of The Following Valve Designations.

SIZE	GATE	GLOBE	BALL (2)	CHECK	NEEDLE (1)
1/2" - 1 1/2" S.W.	GA-2082	GL-2082	BA-2062	CH-2082	--
1/2" - 1 1/2" Scr'd <sup>(3)</sup>	GA-3082	GL-3082	BA-3062	CH-3082	NE-3602
1/2" - 1 1/2" S.W. x NPT	GA-5082	GL-5082	BA-5062	--	--
2"	GA-1032	GL-1032	BA-1032	CH-1032	--
3"	GA-1032	GL-1032	BA-1032	CH-1032	--
4"	GA-1032	GL-1032	BA-1032	CH-1032	--
6"	GA-1032	GL-1032	BA-1032	CH-1032	--
8"	GA-1032	Use Gate	BA-1032GX	CH-1032	--
10"	GA-1032	Use Gate	BA-1032GX	CH-1032	--
12"	GA-1032G	Use Gate	BA-1032GX	CH-1032	--
14" & Up	GA-1032G	Use Gate	BA-1032G	CH-1032	--

- NOTES:
- Needle Valves 316 SS Bar Stock & Trim.
  - Short Pattern Applies to Regular Port Valves Only.
  - Unless otherwise approved by Owner, socket weld connections shall be used instead of threaded connections, except for Utility / Instrument Air service.





# GREENFIRE OIL AND GAS LTD.

## SPECIFICATIONS

PIPING MATERIALS	GF5050
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### CLASS CS

PRIMARY SERVICE RATING:	ANSI 600	TEMPERATURE LIMITS:	-29°C TO 250°C (4)
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SERVICE :	Sour Hydrocarbons, Produced Water, Rich and Lean Amine, Process Drain and Relief Systems	MATERIAL GROUP:	Carbon Steel Group 1.1
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DESIGN CODE:	ASME B31.3	CORROSION ALLOWANCE:	3.2 mm
PRESSURE :	10,200 kPag @ 38°C (1480 psig @ 100°F)	STRESS RELIEF:	Yes - Per GHOPCO Specification GF5051
TEMPERATURE :	Per ANSI B16.5 For Higher Temp		

RADIOGRAPHY :	100% Of All Butt Welds To Be 100% Radiographed
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SIZE RANGE INCHES NPS	1/2" TO 2"	3" TO 8"	10" AND UP	NOTES
SCHEDULE	XXS <= 3/4" < 160	80	Calculate	1
PIPE	A-106 Gr. B, Smls	A-106 Gr. B, Smls	A-106 Gr. B, Smls	1
FITTINGS:				
BUTT WELD	A-234 Gr. WPB	A-234 Gr. WPB	A-234 Gr. WPB	2, 5
S.W.	A-105, 6000#, F.S.	Not Allowed	Not Allowed	
UNIONS	6000#, F.S., A-105 GJ Integral Steel Seat			2, 5
O'LETS	6000#, F.S., SCH To Match Pipe (BW), A-105N			5
SWAGES	A-106 Gr. B, Smls,, SCH to match pipe			1
NIPPLES	A-106 Gr. B, Smls,, SCH to match pipe			1
FLANGES	ANSI 600 RFWN, A-105N			3
ORIFICE FLGS	ANSI 600 RFWN, A-105N			
GASKETS	Spiral wound, Lamons, type WRI, 316 c/w solid inner & outer rings, graphite filler			
STUDS	A-193 Gr. B7M			
NUTS	A-194 Gr. 2HM			

- NOTES:
1. For Branch Connections Refer to Paragraph 8.0
  2. 2" & Larger Use Flanges.
  3. With OWNER Approval, Flanges 1/2" To 1 1/2" May Be R.F. Socket Weld.
  4. MDMT For Nominal Wall Thickness Greater Than 13 mm (0.5") Must Be Increased Per ANSI B31.3 Figure 323.2.2 Curve B.
  5. Unless otherwise approved by Owner, socket weld connections shall be used instead of threaded connections, except for Utility / Instrument Air service.





PIPING MATERIALS	GF5050
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**CLASS CS (CONT'D)**

PRIMARY SERVICE RATING: ANSI 600      TEMPERATURE LIMITS: -29°C TO 250°C

VALVES: Refer To GHOPCO Specification GF5053, Valve Specifications, For Details Of The Following Valve Designations.

SIZE	GATE	GLOBE	BALL	CHECK	NEEDLE (1)
1/2" - 1 1/2" S.W.	GA-2082	GL-2082	BA-2062	CH-2082	--
1/2" - 1 1/2" Scr'd <sup>(2)</sup>	GA-3082	GL-3082	BA-3062	CH-3082	NE-3602
1/2" - 1 1/2" S.W. x NPT	GA-5082	GL-5082	BA-5062	--	--
2"	GA-1062	GL-1062	BA-1062	CH-1062	--
3"	GA-1062	GL-1062	BA-1062	CH-1062	--
4"	GA-1062	GL-1062	BA-1062	CH-1062	--
6"	GA-1062	GL-1062	BA-1062GM	CH-1062	--
8"	GA-1062G	Use Gate	BA-1062GM	CH-1062	--
10"	GA-1062G	Use Gate	BA-1062GM	CH-1062	--
12"	GA-1062G	Use Gate	BA-1062GM	CH-1062	--
14" & Up	GA-1062G	Use Gate	BA-1062GM	CH-1062	--

- NOTE:
1. Needle Valves 316 SS Bar Stock & Trim.
  2. Unless otherwise approved by Owner, socket weld connections shall be used instead of threaded connections, except for Utility / Instrument Air service.



<b>PIPING MATERIALS</b>	<b>GF5050</b>
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**CLASS AH**

<b>PRIMARY SERVICE RATING:</b>	<b>ANSI 150</b>	<b>TEMPERATURE LIMITS:</b>	<b>-29°C TO 378°C (4)</b>
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<b>SERVICE :</b>	Hot Water, Steam, Hot Bitumen, Hot Hydrocarbon Vapour	<b>MATERIAL GROUP:</b>	Carbon Steel Group 1.1
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<b>DESIGN CODE:</b>	ASME B31.3	<b>CORROSION ALLOWANCE:</b>	1.6 mm
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<b>PRESSURE:</b>	1965 kPag @ 38°C (285 psig @ 100°F)	<b>STRESS RELIEF:</b>	All Welds Over 19 mm (0.75") Wall Thickness.
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<b>TEMPERATURE :</b>	Per ANSI B16.5 For Higher Temp		
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<b>RADIOGRAPHY :</b>	10% Of All Butt Welds To Be 100% Radiographed
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SIZE RANGE INCHES NPS	1/2" TO 2"	3" TO 10"	12" AND UP	NOTES
<b>SCHEDULE PIPE</b>	80 A-106 Gr. B, Smls	40 A-106 Gr. B, Smls	Calculate A-106 Gr. B, Smls	1
<b>FITTINGS:</b>				1
<b>BUTT WELD S.W.</b>	A-234 Gr. WPB A-105, 3000#, F.S.	A-234 Gr. WPB Not Allowed	A-234 Gr. WPB Not Allowed	2, 5
<b>UNIONS</b>	3000#, F.S., A-105 GJ Integral Steel Seat			2, 5
<b>O'LETS</b>	3000#, F.S., SCH To Match Pipe (BW), A-105N			5
<b>SWAGES</b>	A-106 Gr. B, Smls,, SCH to match pipe			
<b>NIPPLES</b>	A-106 Gr. B, Smls,, SCH to match pipe			
<b>FLANGES</b>	ANSI 150 RFWN, A-105N			3
<b>ORIFICE FLGS</b>	ANSI 300 RFWN, A-105N			
<b>GASKETS</b>	316L Spiral wound, with both a solid inner and outer metal ring(User Lamons Style WRI or equal)			
<b>STUDS</b>	A-193 Gr. B7			
<b>NUTS</b>	A-194 Gr. 2H			

- NOTES:**
- 12" & Up Minimum Wall Thickness 9.525 mm (0.375"). For Branch Connections Refer to Paragraph 8.0.
  - 2" & Larger Use Flanges.
  - With OWNER Approval, Flanges 1/2" To 1 1/2" May Be R.F. Socket Weld.
  - MDMT For Nominal Wall Thickness Greater Than 13 mm (0.5") Must Be Increased Per ANSI B31.3, Figure 323.2.2 Curve B.



PIPING MATERIALS	GF5050
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5. Unless otherwise approved by Owner, socket weld connections shall be used instead of threaded connections, except for Utility / Instrument Air service.

**CLASS AH (CONT'D)**

PRIMARY SERVICE RATING: ANSI 150      TEMPERATURE LIMITS: -29°C TO 378°C

VALVES: Refer To GHOPCO Specification GF5053, Valve Specifications, For Details Of The Following Valve Designations.

SIZE	GATE	GLOBE	BALL	CHECK	NEEDLE
1/2" - 1 1/2" S.W.	GA-2081	GL-2081	NONE	CH-2081	--
1/2" - 1 1/2" Scr'd <sup>(1)</sup>	GA-3081	GL-3081	NONE	CH-3081	NE-3601
1/2" - 1 1/2" S.W. x NPT	GA-5081	GL-5081	NONE	--	--
2"	GA-1011	GL-1011	NONE	CH-1011	--
3"	GA-1011	GL-1011	NONE	CH-1011	--
4"	GA-1011	GL-1011	NONE	CH-1011	--
6"	GA-1011	GL-1011	NONE	CH-1011	--
8"	GA-1011	Use Gate	NONE	CH-1011	--
10"	GA-1011	Use Gate	NONE	CH-1011	--
12"	GA-1011G	Use Gate	NONE	CH-1011	--
14" & Up	GA-1011G	Use Gate	NONE	CH-1011	--

**NOTE:**

1. Unless otherwise approved by Owner, socket weld connections shall be used instead of threaded connections, except for Utility / Instrument Air service.



# GREENFIRE OIL AND GAS LTD.

## SPECIFICATIONS

PIPING MATERIALS	GF5050
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### CLASS BH

PRIMARY SERVICE RATING:	ANSI 300	TEMPERATURE LIMITS:	-29°C TO 378°C (5)
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SERVICE :	Hot Water, Steam, Hot Bitumen, Hot Hydrocarbon Vapour	MATERIAL GROUP:	Carbon Steel Group 1.1
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DESIGN CODE:	ASME B31.3	CORROSION ALLOWANCE:	1.6 mm
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PRESSURE:	4160 kPag @ 254°C (603 psig @ 489°F)	STRESS RELIEF:	All Welds Over 19 mm (0.75") Wall Thickness.
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TEMPERATURE :	Per ANSI B16.5 For Higher Temp		
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RADIOGRAPHY :	10% Of All Butt Welds To Be 100% Radiographed		
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SIZE RANGE INCHES NPS	1/2" TO 2"	3" TO 10"	12" AND UP	NOTES
SCHEDULE	160 $\leq \frac{3}{4}$ " < 80	40	Calculate	1, 2
PIPE	A-106 Gr. B, Smls	A-106 Gr. B, Smls	A-106 Gr. B, Smls	
FITTINGS:				1
BUTT WELD	A-234 Gr. WPB	A-234 Gr. WPB	A-234 Gr. WPB	
S.W.	A-105, 3000#, F.S.	Not Allowed	Not Allowed	3, 6
UNIONS	3000#, F.S., A-105 GJ Integral Steel Seat			3, 6
O'LETS	3000#, F.S., SCH To Match Pipe (BW), A-105N			6
SWAGES	A-106 Gr. B, Smls., SCH to match pipe			1
NIPPLES	A-106 Gr. B, Smls., SCH to match pipe			1
FLANGES	ANSI 300 RFWN, A-105N			4
ORIFICE FLGS	ANSI 300 RFWN, A-105N			
GASKETS	316L Spiral wound, with both a solid inner and outer metal ring(User Lamons Style WRI or equal)			
STUDS	A-193 Gr. B7			
NUTS	A-194 Gr. 2H			

- NOTES:
1. For Branch Connections Refer to Paragraph 8.0.
  2. 12" & Up Minimum Wall Thickness 9.525 mm (0.375").
  3. 2" & Larger Use Flanges.
  4. With OWNER Approval, Flanges 1/2" To 1 1/2" May Be R.F. Socket Weld.
  5. MDMT For Nominal Wall Thickness Greater Than 13 mm (0.5") Must Be Increased Per ANSI B31.3, Figure 323.2.2 Curve B.





PIPING MATERIALS	GF5050
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6. Unless otherwise approved by Owner, socket weld connections shall be used instead of threaded connections, except for Utility / Instrument Air service.

### **CLASS BH (CONT'D)**

PRIMARY SERVICE RATING: ANSI 300      TEMPERATURE LIMITS: -29°C TO 378°C

VALVES: Refer To GHOPCO Specification GF5053, Valve Specifications, For Details Of The Following Valve Designations.

SIZE	GATE	GLOBE	BALL	CHECK	NEEDLE
1/2" - 1 1/2" S.W.	GA-2081	GL-2081	NONE	CH-2081	--
1/2" - 1 1/2" Scr'd <sup>(1)</sup>	GA-3081	GL-3081	NONE	CH-3081	NE-3601
1/2" - 1 1/2" S.W. x NPT	GA-5081	GL-5081	NONE	--	--
2"	GA-1031	GL-1031	NONE	CH-1031	--
3"	GA-1031	GL-1031	NONE	CH-1031	--
4"	GA-1031	GL-1031	NONE	CH-1031	--
6"	GA-1031	GL-1031	NONE	CH-1031	--
8"	GA-1031	Use Gate	NONE	CH-1031	--
10"	GA-1031	Use Gate	NONE	CH-1031	--
12"	GA-1031G	Use Gate	NONE	CH-1031	--
14" & Up	GA-1031G	Use Gate	NONE	CH-1031	--

**NOTES:**

1. Unless otherwise approved by Owner, socket weld connections shall be used instead of threaded connections, except for Utility / Instrument Air service.





PIPING MATERIALS	GF5050
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### CLASS CH

PRIMARY SERVICE RATING:	ANSI 600	TEMPERATURE LIMITS:	-29°C TO 378°C (4)
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SERVICE :	Hot Water, Steam, Hot Bitumen, Hot Hydrocarbon Vapour	MATERIAL GROUP:	Carbon Steel Group 1.1
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DESIGN CODE:	ASME B31.3	CORROSION ALLOWANCE:	1.6 mm
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PRESSURE:	10,200 kPag @ 38°C (1480 psig @ 100°F)	STRESS RELIEF:	All Welds Over 19 mm (0.75") Wall Thickness.
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TEMPERATURE :	Per ANSI B16.5 For Higher Temp		
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RADIOGRAPHY :	10% Of All Butt Welds To Be 100% Radiographed
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SIZE RANGE INCHES NPS	1/2" TO 1-1/2"	2" TO 8"	10" AND UP	NOTES
SCHEDULE	160	80	Calculate	1
PIPE	A-106 Gr. B, Smls	A-106 Gr. B, Smls	A-106 Gr. B, Smls	
FITTINGS:				1
BUTT WELD	A-234 Gr. WPB	A-234 Gr. WPB	A-234 Gr. WPB	
S.W.	A-105, 3000#, F.S.	Not Allowed	Not Allowed	2, 5
UNIONS	3000#, F.S., A-105 GJ Integral Steel Seat			2, 5
O'LETS	3000#, F.S., SCH To Match Pipe (BW), A-105N			5
SWAGES	A-106 Gr. B, Smls., SCH to match pipe			1
NIPPLES	A-106 Gr. B, Smls., SCH to match pipe			1
FLANGES	ANSI 600 RFWN, A-105N			3
ORIFICE FLGS	ANSI 600 RFWN, A-105N			
GASKETS	316L Spiral wound, with both a solid inner and outer metal ring(User Lamons Style WRI or equal)			
STUDS	A-193 Gr. B7			
NUTS	A-194 Gr. 2H			

- NOTES: 1. For Branch Connections Refer to Paragraph 8.0.  
 2. With OWNER Approval, Flanges 1/2" To 1 1/2" May Be R.F. Socket Weld.  
 3. MDMT For Nominal Wall Thickness Greater Than 13 mm (0.5") Must Be Increased Per ANSI B31.3, Figure 323.2.2 Curve B.



PIPING MATERIALS	GF5050
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4. Unless otherwise approved by Owner, socket weld connections shall be used instead of threaded connections, except for Utility / Instrument Air service.

**CLASS CH (CONT'D)**

PRIMARY SERVICE RATING: ANSI 600      TEMPERATURE LIMITS: -29°C TO 378°C

VALVES: Refer To GHOPCO Specification GF5053, Valve Specifications, For Details Of The Following Valve Designations.

SIZE	GATE	GLOBE	BALL	CHECK	NEEDLE
1/2" - 1 1/2" S.W.	GA-2081	GL-2081Y	NONE	CH-2081	--
1/2" - 1 1/2" Scr'd <sup>(1)</sup>	GA-3081	GL-3081Y	NONE	CH-3081	NE-3601
1/2" - 1 1/2" S.W. x NPT	GA-5081	GL-5081Y	NONE	--	--
2"	GA-1061	GL-1061Y	NONE	CH-1061	--
3"	GA-1061	GL-1061Y	NONE	CH-1061	--
4"	GA-1061	GL-1061Y	NONE	CH-1061	--
6"	GA-1061	Use Gate	NONE	CH-1061	--
8"	GA-1061	Use Gate	NONE	CH-1061	--
10"	GA-1061	Use Gate	NONE	CH-1061	--
12"	GA-1061	Use Gate	NONE	CH-1061	--
14" & Up	GA-1061	Use Gate	NONE	CH-1061	--

**NOTE:**

1. Unless otherwise approved by Owner, socket weld connections shall be used instead of threaded connections, except for Utility / Instrument Air service.



<b>PIPING MATERIALS</b>	<b>GF5050</b>
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**CLASS DH**

<b>PRIMARY SERVICE RATING:</b>	<b>ANSI 900</b>	<b>TEMPERATURE LIMITS:</b>	<b>-29°C TO 378°C (2)</b>
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<b>SERVICE :</b>	Hot Water, Steam, Hot Bitumen, Hot Hydrocarbon Vapour	<b>MATERIAL GROUP:</b>	Carbon Steel Group 1.1
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<b>DESIGN CODE:</b>	ASME B31.3	<b>CORROSION ALLOWANCE:</b>	1.6 mm
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<b>PRESSURE:</b>	15,300 kPag @ 38°C (2220 psig @ 100°F)	<b>STRESS RELIEF:</b>	All Welds Over 19 mm (0.75") Wall Thickness.
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<b>TEMPERATURE :</b>	Per ANSI B16.5 For Higher Temp		
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<b>RADIOGRAPHY :</b>	10% Of All Butt Welds To Be 100% Radiographed
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SIZE RANGE INCHES NPS	1/2" TO 1-1/2"	2" TO 3"	4" AND UP	NOTES
<b>SCHEDULE</b>	160	80	Calculate	1
<b>PIPE</b>	A-106 Gr. B, Smls	A-106 Gr. B, Smls	A-106 Gr. B, Smls	
<b>FITTINGS:</b>				1
<b>BUTT WELD</b>	A-234 Gr. WPB	A-234 Gr. WPB	A-234 Gr. WPB	
<b>S.W.</b>	A-105, 6000#, F.S.	Not Allowed	Not Allowed	3
<b>UNIONS</b>	Not Allowed. Use flanges			
<b>O'LETS</b>	6000#, F.S., SCH To Match Pipe (BW), A-105N			3
<b>SWAGES</b>	A-106 Gr. B, Smls,, SCH to match pipe			1
<b>NIPPLES</b>	A-106 Gr. B, Smls,, SCH to match pipe			1
<b>FLANGES</b>	ANSI 1500 RTJWN <= 2" < ANSI 900 RTJWN, A-105N			
<b>ORIFICE FLGS</b>	ANSI 1500 RTJWN <= 2" < ANSI 900 RTJWN, A-105N			
<b>GASKETS</b>	ANSI 900 Oval Ring, Soft Iron			
<b>STUDS</b>	A-193 Gr. B7			
<b>NUTS</b>	A-194 Gr. 2H			

- NOTES:**
1. For Branch Connections Refer to Paragraph 8.0.
  2. MDMT For Nominal Wall Thickness Greater Than 13 mm (0.5") Must Be Increased Per ANSI B31.3, Figure 323.2.2 Curve B.
  3. Unless otherwise approved by Owner, socket weld connections shall be used instead of threaded connections, except for Utility / Instrument Air service.



**GREENFIRE OIL AND GAS LTD.**

***SPECIFICATIONS***

<b>PIPING MATERIALS</b>	<b>GF5050</b>
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**CLASS DH (CONT'D)**

**PRIMARY SERVICE RATING: ANSI 900      TEMPERATURE LIMITS: -29°C TO 378°C**

**VALVES:** Refer To GHOPCO Specification GF5053, Valve Specifications, For Details Of The Following Valve Designations.

SIZE	GATE	GLOBE	BALL	CHECK	NEEDLE
1/2" - 1 1/2" S.W.	GA-2081	GL-2151Y	NONE	CH-2151	--
1/2" - 1 1/2" Scr'd <sup>(1)</sup>	GA-3081	GL-3151Y	NONE	CH-3151	NE-3601
1/2" - 1 1/2" S.W. x NPT	GA-5081	GL-5151Y	NONE	--	--
2"	GA-8151	GL-8151Y	NONE	CH-8151	--
3"	GA-8091	GL-8091Y	NONE	CH-8091	--
4"	GA-8091	GL-8091Y	NONE	CH-8091	--
6"	GA-8091	Use Gate	NONE	CH-8091	--
8"	GA-8091	Use Gate	NONE	CH-8091	--
10"	GA-8091	Use Gate	NONE	CH-8091	--
12"	GA-8091	Use Gate	NONE	CH-8091	--
14" & Up	GA-8091	Use Gate	NONE	CH-8091	--

**NOTE:**

1. Unless otherwise approved by Owner, socket weld connections shall be used instead of threaded connections, except for Utility / Instrument Air service.





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## SPECIFICATIONS

PIPING MATERIALS	GF5050
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### CLASS AR2

PRIMARY SERVICE RATING:		ANSI 150	TEMPERATURE LIMITS:		-45°C TO 148°C
SERVICE :	Corrosive Chemicals		MATERIAL GROUP:	Stainless Steel Group 2.2	
DESIGN CODE:	ASME B31.3		CORROSION ALLOWANCE:	1.0 mm	
PRESSURE:	1896 kPag @ 38°C (275 psig @ 100°F)		STRESS RELIEF:	No	
TEMPERATURE :	Per ANSI B16.5 For Higher Temp				
RADIOGRAPHY :	100% Of Butt Welds To Be 100% Radiographed				
SIZE RANGE INCHES NPS	½" TO 1-1/2"	2" TO 12"	14" AND UP	NO	
SCHEDULE	40S	10S	Calculate		
PIPE	A-312 Gr. TP316 SMLS	A-312 Gr. TP316 SMLS	A-312 Gr. TP316 SMLS		
FITTINGS:					
BUTT WELD	A-403 Gr. WP316	A-403 Gr. WP316	A-403 Gr. WP316		
S.W.	A-182 Gr. F316	Not Allowed	Not Allowed		
O'LETS	S.W.: 3000#, A-182 Gr. F316, B.W.: Sch to match pipe (BW), A-182 Gr. F316				1
NIPPLES	SCH. 40S, A-312 Gr. TP316 SMLS				
FLANGES	ANSI 150 RFWN, A-182 Gr. F-316				
ORIFICE FLANGES	ANSI 300 RFWN, A-182 Gr. F-316				
GASKETS	Spiral wound, Lamons, type WRI, 316 c/w solid inner & outer rings, graphite filler				
STUDS	A-193 Gr. B8 Cl2				
NUTS	A-194 Gr. 8A				

Note: 1. Flanges up to and including 1-1/2"NPS shall be RFSW.





PIPING MATERIALS	GF5050
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**CLASS AR2 (CONT'D)**

PRIMARY SERVICE RATING: ANSI 150      TEMPERATURE LIMITS: -45°C TO 148°C

VALVES: Refer To GHOPCO Specification GF5053, Valve Specifications, For Details Of The Following Valve Designations.

SIZE	GATE	GLOBE	BALL (1)	BUTTERFLY	CHECK	NEEDLE
1/2" - 1 1/2" S.W.	GA-2083S	GL-2083S	BA-2063S	--	CH-2083S	--
1/2" - 1 1/2" THD X SW	GA-5083S	--	BA-5063S	--	--	--
1/2" - 1 1/2" THD.	--	--	--	--	--	3603
2"	GA-1013S	GL-1013S	BA-1013S	BU-1013S	CH-1013S	--
3"	GA-1013S	GL-1013S	BA-1013S	BU-1013S	CH-1013S	--
4"	GA-1013S	GL-1013S	BA-1013S	BU-1013S	CH-1013S	--
6"	GA-1013S	GL-1013S	BA-1013SX	BU-1013S	CH-1013S	--
8"	GA-1013S	Use Gate	BA-1013SGX	BU-1013SG	CH-1013S	--
10"	GA-1013S	Use Gate	BA-1013SGX	BU-1013SG	CH-1013S	--
12"	GA-1013SG	Use Gate	BA-1013SGX	BU-1013SG	CH-1013S	--
14" & Up	GA-1013SG	Use Gate	BA-1013SG	BU-1013SG	CH-1013S	--

NOTES: 1. Short Pattern Applies to Regular Port Valves Only



<b>PIPING MATERIALS</b>	<b>GF5050</b>
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**CLASS AZ**

<b>PRIMARY SERVICE RATING:</b>	<b>ANSI 150</b>	<b>TEMPERATURE LIMITS:</b>	<b>-18°C to 105°C (acid)-18°C to 117°C (brine)</b>
<b>SERVICE :</b>	0 to 40% Hydrochloric Acid (HCl) 35% Brine (NaOH)	<b>MATERIAL GROUP:</b>	Carbon Steel (Group 1.1) with PTFE liner (liner bonded to pipe)
<b>DESIGN CODE:</b>	ASME B31.3	<b>CORROSION ALLOWANCE:</b>	0 mm
<b>PRESSURE:</b>	0 to 700 kPag (Consult vendor data against specific sizing where vacuum rating is required; rating varies or vacuum may not be permitted.	<b>STRESS RELIEF:</b>	Not applicable. Field welds not permitted.
<b>TEMPERATURE :</b>	(see above)		
<b>RADIOGRAPHY :</b>	Not applicable; field welds not permitted. Quality control per manufacturer's standard.		

SIZE RANGE INCHES NPS	¾" TO 12" (See Note 5)	NOTES
<b>SCHEDULE PIPE</b>	40, 30, 20 (Schedule varies with pipe 517c and with manufacturer) Steel – conforming in composition and mechanical strength to ASTM A587 or A53, with PTFE liner bonded to pipe ; pre-flanged at both ends by manufacturer or manufacturer's representative; including provision for venting permeated gases between liner and metallic housing; additional venting provided for insulated pipe as required by manufacturer.	3
<b>FITTINGS: FLANGED, PTFE lined</b>	Metallic portion of fitting to ASTM A216 WCB, A234 WPB, A587, A106 Gr B, A36, A53, A395 or A105. Metallic housing lined with PTFE. Dimensions and drilling per ANSI B16.5.	3
<b>BUTT WELD</b>	Not allowed.	
<b>S.W. &amp; SCREWED</b>	Not allowed.	
<b>UNIONS</b>	Not allowed.	
<b>O'LETS</b>	Not allowed.	
<b>SWAGES</b>	Not allowed.	
<b>NIPPLES</b>	Not allowed.	
<b>FLANGES</b>	150 ANSI Pattern (except as noted), materials per ASTM A105, A395 or A216 WCB (Raised face comprised of PTFE liner). Dimensions and drilling per ANSI B16.5. Flanges may be threaded, lap joint, welded or integral (part of casting)	3,4
<b>ORIFICE FLGS</b>	Not allowed.	
<b>GASKETS</b>	Not required between lined piping, valves and fittings. Manufacturer's standard between lined piping and other materials and components.	3
<b>STUDS</b>	A-193 Gr. B7	
<b>NUTS</b>	A-194 Gr. 2H	



PIPING MATERIALS	GF5050
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**CLASS AZ (CONT'D)**

PRIMARY SERVICE RATING:	ANSI 150	TEMPERATURE LIMITS:	-18°C TO 105°C (Acid)
			-18°C TO 117°C (Brine)

**VALVES:** Refer To GHOPCO Specification GF5053, Valve Specifications, For Details Of The Following Valve Designations.

SIZE	PLUG	DIAGRAPH	BALL (1) INSTRUMENT VALVE	CHECK	
1"	P-1017	D-1017WP	(see 1" plug valve)	CH-1017	--
2"	P-1017	D-1017WP	N/A	CH-1017	--
3"	P-1017	D-1017WP	N/A	CH-1017	--
4"	P-1017	D-1017WP	N/A	CH-1017	--
6"	P-1017	D-1017WP	N/A	CH-1017	--

- NOTES:**
1. Installation of lined pipe to be strictly in accordance with manufacturer's instructions.
  2. Flange bolt-up torques and retorquing to be in accordance with manufacturer's instructions.
  3. Liners in valves, flanged fittings and pre-flanged pipe ends (i.e. pre-flanged at manufacturer) are formed into raised faced portion of flange faces. No gasketing required between these components. Follow manufacturer's instructions when bolting up to unlined flanges and components.
  4. 300 ANSI pattern flanges shall be used to connect piping system to control valves. Straight pipe spools can be ordered with 150 ANSI pattern at one end and 300 ANSI pattern at the opposite end.
  5. Larger sizing requirement for 18" by 10" reduction on discharge nozzle of heat exchanger E-566 to be handled by two (2) PTFE (teflon) lined reducing flanges, one (1) 18" x 12" and one (1) 12" x 10".



PIPING MATERIALS	GF5050
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**CLASS A6**

PRIMARY SERVICE RATING:	ANSI 150	TEMPERATURE LIMITS:	-45°C TO 148°C
SERVICE :	Concentrated Brackish Water	MATERIAL GROUP:	Super Austenitic Stainless Steel Group 2.2

DESIGN CODE:	ASME B31.3	CORROSION ALLOWANCE:	1mm
PRESSURE:	700kPag @ 38°C (101.5 psig @ 100°F)	STRESS RELIEF:	No
TEMPERATURE :	Per ANSI B16.5 For Higher Temp		
RADIOGRAPHY :	100% Of Butt Welds To Be 100% Radiographed		

SIZE RANGE INCHES NPS	½" TO 1 1/2"	2" TO 12"	14" AND UP	NOTES
SCHEDULE	40S	10S	10s	
PIPE	A-312 Gr. 6% Moly SMLS	A-312 Gr. 6% Moly ERW	A-312 Gr. 6% Moly Fabricated	
FITTINGS:				
BUTT WELD	A-403 Gr. WP-S 254SMO	A-403 Gr. WP-S 254 SMO	A-403 Gr. WP-S 254 SMO	
S.W.	A-182 GR 254SMO	Not Allowed	Not Allowed	
O'LETS	S.W.: 3000#, A-182 Gr. F254SMO, B.W.: Sch to match pipe (BW), A-182 Gr. F254SMO			1
NIPPLES	SCH. 40S, A-312 Gr. TP 254SMO SMLS			
FLANGES	ANSI 150 RFWN, A-182 Gr. 254SMO up to 8", 10" and larger lap joint T316 w/ 254 SMO Stub end			
ORIFICE FLANGES	ANSI 300 RFWN, A-182 Gr. 254SMO			
SPECTACLE	Per ANSI B31.3 at design pressure			
GASKETS	Spiral wound, Lamons, type WRI, <b>Monel</b> c/w solid inner & outer rings, graphite filler			
STUDS	A-193 Gr. B8 Cl2			
NUTS	A-194 Gr. 8A			





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Note: 1. 6% moly may refer to any 6% moly based super austenitic stainless steels of which 254SMO, AL6XN, or 1925HMo are suitable materials.

### CLASS A6 (CONT'D)

PRIMARY SERVICE RATING: ANSI 150 TEMPERATURE LIMITS: -45°C TO 148°C

VALVES: Refer To GHOPCO Specification GF5053, Valve Specifications, For Details Of The Following Valve Designations.

SIZE	GATE	GLOBE	BALL (1)	BUTTERFLY	CHECK	NEEDLE
1/2" - 1 1/2" S.W.	GA-2084	Use gate	BA-2064	--	-	-
1/2" - 1 1/2" THD X SW	GA-5084	--	n/a	--	--	--
1/2" - 1 1/2" THD.	--	--	--	--	--	NE-3604
2"	GA-1014	--	Use gate	--	CH-1018	--
3"	GA-1014	--	Use gate	--	CH-1018	--
4"	GA-1014	--	Use gate	--	CH-1018	--
6"	GA-1014	--	Use gate	--	CH-1018	--
8"	GA-1018	--	--	--	--	--
10"	-	--	--	--	--	--
12"	-	--	--	--	--	--
14" & Up	-	--	--	--	--	--

NOTES: 1. For GA-5084, machine one end of the valve to provide a standard Thd connection. This valve is not available in a vendor supplied THD x SW configuration.





PIPING MATERIALS	GF5050
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**CLASS SP1**

PRIMARY SERVICE RATING:	ANSI 150	TEMPERATURE LIMITS:	-29°C TO 148°C
SERVICE :	Low Pressure Steam	MATERIAL GROUP:	Austenitic Stainless Steel Group 2.2

DESIGN CODE:	ASME B31.3	CORROSION ALLOWANCE:	1mm
PRESSURE:	150kPag @ 148°C(21.8psig @ 298°F) & FV	STRESS RELIEF:	No
TEMPERATURE :	Per ANSI B16.5 For Higher Temp		
RADIOGRAPHY :	10% Of Butt Welds To Be 100% Radiographed		

SIZE RANGE INCHES NPS	½" TO 1 1/2"	2" TO 12"	14" AND UP	NOTES
SCHEDULE	40S	10S	Calculate	2
PIPE	A-312 Gr. TP304 SMLS	A-312 Gr. TP304 SMLS	A-312 Gr. TP304 fabricated	
FITTINGS:				
BUTT WELD	A-403 Gr. WP304	A-403 Gr. WP304	A-403 Gr. WP304	
S.W.	A-182 Gr. F304	Not Allowed	Not Allowed	

O'LETS	S.W.: 3000#, A-182 Gr. F304 B.W.: Sch to match pipe (BW), A-182 Gr. F304
NIPPLES	SCH. 40S, A-312 Gr. TP304 SMLS
FLANGES	ANSI 150 RFWN, A-182 Gr. F-304 up to 8", 10" to 40" ANSI 150 B16.5 lap joint, over 40" ANSI 150 B16.47 Series B Lap Joint
STUB ENDS	Stub ends per ASTM A403 MSS Type A or Lap Ring
SPECTACLE BLIND	Per ANSI B31.3 at design pressure
GASKETS	Spiral, Lamons, type WRI/WR, 316 c/w solid inner & outer rings, graphite filler. 42" and over use Gylon 3500.
STUDS	A-193 Gr. B8 Cl2
NUTS	A-194 Gr. 8A
VACUUM RNGS	ASTM A276 T304



PIPING MATERIALS	GF5050
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**CLASS SP1 (CONT'D)**

**PRIMARY SERVICE RATING:** ANSI 150      **TEMPERATURE LIMITS:** -29°C TO 148°C

**VALVES:** Refer To GHOPCO Specification GF5053, Valve Specifications, For Details Of The Following Valve Designations.

SIZE	GATE	GLOBE	BALL (1)	BUTTERFLY	CHECK	NEEDLE
1/2" - 1 1/2" S.W.	GA-2083S	GL-2083S	BA-2063S	--	CH-2083S	--
1/2" - 1 1/2" THD X SW	GA-5083S	--	BA-5063S	--	--	--
1/2" - 1 1/2" THD.	--	--	--	--	--	NE-3603
2"	--	GL-1013S	--	--	--	--
3"	--	GL-1013S	--	--	--	--
4"	--	GL-1013S	--	--	--	--
6"	--	GL-1013S	--	--	--	--
8"	GA-1013S	Use Gate	--	BU-1013S	--	--
10"	GA-1013S	Use Gate	--	BU-1013S	--	--
12"	GA-1013SG	Use Gate	--	BU-1013S	--	--
14" & Up	GA-1013SG	Use Gate		BU-1014	CH-1013S	--

**NOTES:** 1. Vacuum ring spacing and sizing shall be added, as required, by the piping configuration.  
 2. For diameters:      up to 20": Schedule 10s  
                                  over 20" to 24": Schedule 10  
                                  over 24": Schedule STD



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## SPECIFICATIONS

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### CLASS AP

PRIMARY SERVICE RATING: ANSI 150 TEMPERATURE LIMITS: -29°C TO 250°C (6)

SERVICE: Corrosive Service: Hydrocarbons, Produced Water, Process Drain and Relief Systems MATERIAL GROUP: Carbon Steel Group 1.1

DESIGN CODE: ASME B31.3 CORROSION ALLOWANCE: 3.2 mm  
 PRESSURE : 1965 kPag @ 38°C (285 psig @ 100°F) STRESS RELIEF: All welds over 19 mm (0.75") Wall Thickness  
 TEMPERATURE: Per ANSI B16.5 For Higher Temp

RADIOGRAPHY: 100% Of All Butt Welds To Be 100% Radiographed

SIZE RANGE INCHES NPS	1/2" TO 1-1/2"	2" TO 10"	12" AND UP	NOTES
SCHEDULE	160	40	Calculate	1, 2, 7
PIPE	A-106 Gr. B, Smls	A-106 Gr. B, Smls	A-106 Gr. B, Smls	
FITTINGS:				
BUTT WELD	A-234 Gr. WPB	A-234 Gr. WPB	A-234 Gr. WPB	
S.W. & SCREWED	A-105, 3000#, F.S.	Not Allowed	Not Allowed	5
UNIONS	3000#, F.S., A-105 GJ Integral Steel Seat			3
O'LETS	3000#, F.S. (S.W. or Scr'd.), SCH To Match Pipe (BW), A-105N			
SWAGES	SCH. 160, A-106 Gr. B, Smls			
NIPPLES	SCH. 160, A-106 Gr. B, Smls			
FLANGES	ANSI 150 RFWN, A-105N			4
ORIFICE FLGS	ANSI 300 RFWN, A-105N			
GASKETS	Spiral Wound, 316 S.S. With Soft Steel Centering Ring			
STUDS	A-193 Gr. B7M			
NUTS	A-194 Gr. 2HM			

- NOTES:
- 12" & Up Minimum Wall Thickness 9.525 mm (0.375").
  - 2" Use Schedule 80.
  - 2" & Larger Use Flanges.
  - With OWNER Approval, Flanges 1/2" To 1 1/2" May Be R.F. Socket Weld.
  - Fittings 1-1/2" And Smaller In Amine Service To Be Socket Weld.
  - MDMT For Nominal Wall Thickness Greater Than 13 mm (0.5") Must Be Increased Per ANSI B31.3 Figure 323.2.2 Curve B.
  - 1/2" Scr'd. Use Schedule XXS.
  - For all newly designed tie-ins into the existing piping designated "AP", the "AS" specification is to be used unless an engineer specifies otherwise.



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## SPECIFICATIONS

PIPING MATERIALS	GF5050
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### CLASS AP (CONT'D)

PRIMARY SERVICE RATING: ANSI 150

TEMPERATURE LIMITS: -29°C TO 250°C

VALVES: Refer To GHOPCO Specification GF5053, Valve Specifications, For Details Of The Following Valve Designations.

SIZE	GATE	GLOBE	BALL (2)	CHECK	NEEDLE (1)
1/2" - 1 1/2" S.W.	GA-2082	GL-2082	BA-2062	CH-2082	--
1/2" - 1 1/2" Scr'd	GA-3082	GL-3082	BA-3062	CH-3082	NE-3602
2"	GA-1012	GL-1012	BA-1012	CH-1012	--
3"	GA-1012	GL-1012	BA-1012	CH-1012	--
4"	GA-1012	GL-1012	BA-1012	CH-1012	--
6"	GA-1012	GL-1012	BA-1012X	CH-1012	--
8"	GA-1012	Use Gate	BA-1012GX	CH-1012	--
10"	GA-1012	Use Gate	BA-1012GX	CH-1012	--
12"	GA-1012G	Use Gate	BA-1012GX	CH-1012	--
14" & Up	GA-1012G	Use Gate	BA-1012G	CH-1012	--

- NOTES:
1. Needle Valves 316 SS Bar Stock & Trim.
  2. Short Pattern Applies to Regular Port Valves Only.
  3. For all newly designed tie-ins into the existing piping designated "AP", the "AS" specification is to be used unless an engineer specifies otherwise





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## SPECIFICATIONS

PIPING MATERIALS	GF5050
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### CLASS BP

**PRIMARY SERVICE RATING:** ANSI 300 **TEMPERATURE LIMITS:** -29°C TO 250°C (7)

**SERVICE:** Corrosive Service: Hydrocarbons, Produced Water, Process Drain and Relief Systems **MATERIAL GROUP:** Carbon Steel  
Group 1.1

**DESIGN CODE:** ASME B31.3 **CORROSION ALLOWANCE:** 3.2 mm  
**PRESSURE:** 5100 kPag @ 38°C (740 psig @ 100°F) **STRESS RELIEF:** All welds over 19 mm (0.75") Wall Thickness  
**TEMPERATURE:** Per ANSI B16.5 For Higher Temp

**RADIOGRAPHY:** 100% Of All Butt Welds To Be 100% Radiographed

SIZE RANGE INCHES NPS	1/2" TO 1-1/2"	2" TO 8"	10" AND UP	NOTES
<b>SCHEDULE</b>	160	80	Calculate	1,2
<b>PIPE</b>	A-106 Gr. B, Smls	A-106 Gr. B, Smls	A-106 Gr. B, Smls	
<b>FITTINGS:</b>				
<b>BUTT WELD</b>	A-234 Gr. WPB	A-234 Gr. WPB	A-234 Gr. WPB	
<b>S.W. &amp; SCREWED</b>	A-105, 3000#, F.S.	Not Allowed	Not Allowed	4, 6
<b>UNIONS</b>	3000#, F.S., A-105 GJ Integral Steel Seat			3, 4
<b>O'LETS</b>	3000#, F.S. (S.W. or Scr'd.), SCH To Match Pipe (BW), A-105N			4
<b>SWAGES</b>	SCH. 160, A-106 Gr. B, Smls			1
<b>NIPPLES</b>	SCH. 160, A-106 Gr. B, Smls			1
<b>FLANGES</b>	ANSI 300 RFWN, A-105N			5
<b>ORIFICE FLGS</b>	ANSI 300 RFWN, A-105N			
<b>GASKETS</b>	Spiral Wound, 316 S.S. With Soft Steel Centering Ring			
<b>STUDS</b>	A-193 Gr. B7M			
<b>NUTS</b>	A-194 Gr. 2HM			

- NOTES:**
- 1/2" & 3/4" Use Schedule XXS. For Branch Connections Refer to Paragraph 8.0.
  - 12" & Up Minimum Wall Thickness 9.525 mm (0.375").
  - 2" & Larger Use Flanges.
  - 1/2" & 3/4" Use 6000#.
  - With OWNER Approval, Flanges 1/2" To 1 1/2" May Be R.F. Socket Weld.
  - Fittings 1-1/2" And Smaller In Amine Service To Be Socket Weld.
  - MDMT For Nominal Wall Thickness Greater Than 13 mm (0.5") Must Be Increased Per ANSI B31.3 Figure 323.2.2 Curve B.
  - For all newly designed tie-ins into the existing piping designated "BP", the "BS" specification is to be used unless an engineer specifies otherwise.





PIPING MATERIALS	GF5050
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**CLASS BP (CONT'D)**

PRIMARY SERVICE RATING: ANSI 300

TEMPERATURE LIMITS: -29°C TO 250°C

VALVES: Refer To GHOPCO Specification GF5053, Valve Specifications, For Details Of The Following Valve Designations.

SIZE	GATE	GLOBE	BALL (2)	CHECK	NEEDLE (1)
1/2" - 1 1/2" S.W.	GA-2082	GL-2082	BA-2062	CH-2082	--
1/2" - 1 1/2" Scr'd	GA-3082	GL-3082	BA-3062	CH-3082	NE-3602
2"	GA-1032	GL-1032	BA-1032	CH-1032	--
3"	GA-1032	GL-1032	BA-1032	CH-1032	--
4"	GA-1032	GL-1032	BA-1032	CH-1032	--
6"	GA-1032	GL-1032	BA-1032	CH-1032	--
8"	GA-1032	Use Gate	BA-1032GX	CH-1032	--
10"	GA-1032	Use Gate	BA-1032GX	CH-1032	--
12"	GA-1032G	Use Gate	BA-1032GX	CH-1032	--
14" & Up	GA-1032G	Use Gate	BA-1032G	CH-1032	--

- NOTES:
1. Needle Valves 316 SS Bar Stock & Trim.
  2. Short Pattern Applies to Regular Port Valves only.
  3. For all newly designed tie-ins into the existing piping designated "BP", the "BS" specification is to be used unless an engineer specifies otherwise



<b>PIPING MATERIALS</b>	<b>GF5050</b>
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### CLASS CP

**PRIMARY SERVICE RATING:** ANSI 600 -29°C TO 250°C (6)

<b>SERVICE:</b> Corrosive Service: Hydrocarbons, Produced Water, Rich and Lean Amine, Process Drain and Relief Systems	<b>MATERIAL GROUP:</b> Carbon Steel Group 1.1
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<b>DESIGN CODE:</b> ASME B31.3 <b>PRESSURE:</b> 5100 kPag @ 38°C (740 psig @ 100°F)	<b>CORROSION ALLOWANCE:</b> 3.2 mm <b>STRESS RELIEF:</b> All welds over 19 mm (0.75") Wall Thickness
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**TEMPERATURE:** Per ANSI B16.5 For Higher Temp

**RADIOGRAPHY:** 100% Of All Butt Welds To Be 100% Radiographed

SIZE RANGE INCHES NPS	1/2" TO 1-1/2"	2" TO 8"	10" AND UP	NOTES
<b>SCHEDULE</b>	160	80	Calculate	1,7
<b>PIPE</b>	A-106 Gr. B, Smls	A-106 Gr. B, Smls	A-106 Gr. B, Smls	
<b>FITTINGS:</b>				
<b>BUTT WELD</b>	A-234 Gr. WPB	A-234 Gr. WPB	A-234 Gr. WPB	
<b>S.W. &amp; SCREWED</b>	A-105, 3000#, F.S.	Not Allowed	Not Allowed	5
<b>UNIONS</b>	6000#, F.S., A-105 GJ Integral Steel Seat			2
<b>O'LETS</b>	6000#, F.S. (S.W. or Scr'd.), SCH To Match Pipe (BW), A-105N			
<b>SWAGES</b>	SCH. 160, A-106 Gr. B, Smls			3, 7
<b>NIPPLES</b>	SCH. 160, A-106 Gr. B, Smls			3, 7
<b>FLANGES</b>	ANSI 600 RFWN, A-105N			4
<b>ORIFICE FLGS</b>	ANSI 600 RFWN, A-105N			
<b>GASKETS</b>	Spiral Wound, 316 S.S. With Soft Steel Centering Ring			
<b>STUDS</b>	A-193 Gr. B7M			
<b>NUTS</b>	A-194 Gr. 2HM			

- NOTES:**
- 2" Use Schedule 160.
  - 2" & Larger Use Flanges.
  - For Branch Connections Refer to Paragraph 8.0.
  - With OWNER Approval, Flanges 1/2" To 1 1/2" May Be R.F. Socket Weld.
  - Fittings 1-1/2" And Smaller In Amine Service To Be Socket Weld.
  - MDMT For Nominal Wall Thickness Greater Than 13 mm (0.5") Must Be Increased Per ANSI B31.3 Figure 323.2.2 Curve B.
  - 1/2" To 1-1/2" Screwed Use Schedule XXS.
  - For all newly designed tie-ins into the existing piping designated "CP", the "CS" specification is to be used unless an engineer specifies otherwise.



PIPING MATERIALS	GF5050
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**CLASS CP (CONT'D)**

**PRIMARY SERVICE RATING:** ANSI 600      **TEMPERATURE LIMITS:** -29°C TO 250°C

**VALVES:** Refer To GHOPCO Specification GF5053, Valve Specifications, For Details Of The Following Valve Designations.

SIZE	GATE	GLOBE	BALL	CHECK	NEEDLE
1/2" - 1 1/2" S.W.	GA-2082	GL-2082	BA-2062	CH-2082	--
1/2" - 1 1/2" Scr'd	GA-3082	GL-3082	BA-3062	CH-3082	NE-3602
2"	GA-1062	GL-1062	BA-1062	CH-1062	--
3"	GA-1062	GL-1062	BA-1062	CH-1062	--
4"	GA-1062	GL-1062	BA-1062	CH-1062	--
6"	GA-1062	GL-1062	BA-1062GM	CH-1062	--
8"	GA-1062G	Use Gate	BA-1062GM	CH-1062	--
10"	GA-1062G	Use Gate	BA-1062GM	CH-1062	--
12"	GA-1062G	Use Gate	BA-1062GM	CH-1062	--
14" & Up	GA-1062G	Use Gate	BA-1062GM	CH-1062	--

**NOTE:**

1. Needle Valves 316 SS Bar Stock & Trim.
2. For all newly designed tie-ins into the existing piping designated "CP", the "CS" specification is to be used unless an engineer specifies otherwise





# GREENFIRE OIL AND GAS LTD.

## SPECIFICATIONS

PIPING MATERIALS	GF5050
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### CLASS AV1

PRIMARY SERVICE RATING: ANSI 150 FF +10°C TO 48°C

SERVICE: Water treatment, 20% Hydrochloric Acid and HCL Acid vent lines (Note 1) MATERIAL GROUP: PVC (Polyvinyl Chloride) Note 2

DESIGN CODE: ASME B31.3 CORROSION ALLOWANCE: None

PRESSURE: 150 psi (1034 kPa) STRESS RELIEF: N/A

TEMPERATURE: 48 °C (118°F)

RADIOGRAPHY: None

ITEM	SIZE (INCH)	DESCRIPTION	NOTES
PIPE	0.75 – 8	ASTM D1785, PE, SCH-80	3
FLANGES	0.75 – 8	ASTM D2467, CL 150, SOCKET TYPE, FF, SCH-80	4
	0.75 – 8	ASTM D2467, CL 150, BLIND, FF	4
ELBOWS	0.75 – 8	45, ASTM D2467, SOCKET TYPE, SCH-80 90, ASTM D2467, SOCKET TYPE, SCH-80	
TEES	0.75 – 8 x 0.75- 8	ASTM D2467, SOCKET TYPE, SCH-80	
CAPS	0.75 – 8	ASTM D2467, SOCKET TYPE, SCH-80	
NIPPLES	0.75 – 1.5	USE PIPE	
COUPLINGS	0.75 – 8 x 0.75- 8	ASTM D2467, SOCKET TYPE, SCH-80	
UNIONS	0.75 – 2	TYPE 375, SOCKET TYPE, SCH-80	
BOLTING	ALL	ASTM A193 GR B7 WITH A194 GR 2H NUTS	
GASKETS	0.75 – 8	CL 150, 0.125 INCH THK, FULL FACE, NEOPRENE, ASME B16.21	

#### VALVES

BALL VALVES	0.75 – 2	VBA0140-FB – PVC, DOUBLE UNION WITH SOCKET ENDS	5
CHECK VALVES	0.75 – 2	VCH0202 – PVC, BALL TYPE WITH SOCKET ENDS	5
BUTTERFLY VALVE	3 – 8	VBU0100 – PVC, CL 150, FLANGED ENDS	

#### NOTES:

1. The use of this line class is subject to approval by the owner's engineer
2. Dimensions, fabrication and installation procedures shall be to the selected manufacturer's standard.
3. Dimensions, tolerances and testing shall follow ASTM D1785. The cell classification of 12454 shall be to ASTM D1784.
4. Drilling and flange OD shall be to ASME B16.5
5. Ball and check valves larger than NPS 2 in PVC have reduced working pressures unable to meet the line class conditions. If required, they will be "SP" specialty items.



<b>PIPING MATERIALS</b>	<b>GF5050</b>
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**CLASS APR**

**PRIMARY SERVICE RATING:** ANSI 150 FF **-29°C TO 60°C**

**SERVICE:** Hydrochloric Acid (35% WT. MAX.) **MATERIAL GROUP:** FRP (Fiberglass)  
Note 1

**DESIGN CODE:** ASME B31.3 **CORROSION ALLOWANCE:** None

**PRESSURE:** 150 psi (1034 kPa) **STRESS RELIEF:** N/A

**TEMPERATURE:** 60 °C (140°F)

**RADIOGRAPHY:** None

ITEM	SIZE (INCH)	DESCRIPTION	NOTES
PIPE	1 – 10	ASTM D2997, CENTRIFUGALLY CAST EPOXY RESIN	3
FLANGES	1 – 10	ASTM D4024, EPOXY RESIN, CL 150 FF, SOCKET CONNECTION	5,6
	1 – 10	ASTM D4024, EPOXY RESIN, CL 150 FF, BLIND	
ELBOWS	1 – 10	45, ASTM D5684, STRAIGHT SOCKET, ADHESIVE BONDED	
	1 – 10	90, ASTM D5684, STRAIGHT SOCKET, ADHESIVE BONDED	
TEES	1 – 10 x 1 – 10	ASTM D5685, STRAIGHT SOCKET, ADHESIVE BONDED	
REDUCERS	2 – 10 x 1 – 8	ASTM D5685, STRAIGHT SOCKET, ADHESIVE BONDED	
CAPS	1 – 10	ASTM D5685, STRAIGHT SOCKET, ADHESIVE BONDED	
COUPLINGS	1 – 10	ASTM D5685, STRAIGHT SOCKET, ADHESIVE BONDED	
BOLTING	ALL	ASTM B574 (N10276) WITH F467 (N10276) NUTS	4
GASKETS	1 – 10	FULL FACE, CL 150, 0.125 INCH THK, VITON (60 to 70 DUROMETER)	2

**VALVES**

BALL VALVES	1 – 10	VBA0163 – CL 150, PFA LINED, GENERALLY TO API 608	
CHECK VALVES	1 – 10	VCH0213 – CL 150, PFA LINED, ASME B16.34	

**NOTES:**

1. Installation, end preparation, adhesive and provision for expansion shall be in accordance with the selected manufacturer's instructions.
2. Gasket not required at flanged to line valve connection.
3. Pipe and fittings shall have a 100 MIL internal pure resin corrosion barrier and a 10 MIL external resin corrosion barrier.
4. Follow selected manufacturer's bolt torque requirements.
5. Flange joints in outdoor piping shall have removable insulation blankets with weephole.
6. Flange joints in non-insulated indoor piping shall have transparent spray shields.





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***SPECIFICATIONS***

<b>PIPING MATERIALS</b>	<b>GF5050</b>
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## **APPENDIX B**

### **BRANCH CONNECTIONS**



PIPING MATERIALS	GF5050
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**BRANCH CONNECTION TABLE 1 - PIPING CLASSES A TO E**

	BRANCH											
HEADERS	inches	¾	1	1 1/2	2	3	4	6	8	10	12	
	¾	T										
	1	RT	T									
	1 1/2	RT	RT	T								
	2	S	Note 5	T	T							
	3	S	S	S	RT	T						
	4	S	S	S	RT	RT	T					
	6	S	S	S	W	RT	RT	T				
	8	S	S	S	W	W	RT	RT	T			
	10	S	S	S	W	W	RT	RT	RT	T		
	12	S	S	S	W	W	W	RT	RT	RT	T	

Notes:

T - Straight Tee

RT- Reducing Tee

W - Weldolet

S - Sockolet or Threadolet

- 1) Weldolets, sockolets, threadolets and tees, when used for branch connections, shall meet the rating requirements of the applicable Piping Material Specification.
- 2) Threadolets may be used for pressure and temperature connections in non-vibrating service. Elbowlets (threaded) shall be used in lieu of threadolets for temperature connections located at elbows. Minimum size elbows with temperature connection shall be 3" NPS. Where line is 2" NPS and smaller increase size to 3" NPS at elbow.
- 3) All branch connections shall be designed and reinforced so that the branch line connection is equal to the pressure and temperature rating of the header.
- 4) Any deviation from the connection type shown in the above table or branch connections for larger piping sizes shall be approved in writing by OWNER.
- 5) Use 2" NPS tee with 2' x 1" swage



PIPING MATERIALS	GF5050
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**BRANCH CONNECTION TABLE 3 - PIPING CLASS A – UTILITY WATER ONLY**

B R A N C H											
	inche	¾	1	1 1/2	2	3	4	6	8	10	12
H E A D E R 4	¾	T									
	1	RT	T								
	1 1/2	RT	RT	T							
	2	S	Note 4	T	T						
	3	S	S	S	SI	T					
	4	S	S	S	SI	SI	T				
	6	S	S	S	SI	SI	SI	T			
	8	S	S	S	SI	SI	SI	SI	T		
	10	S	S	S	SI	SI	SI	SI	SI	T	
	12	S	S	S	SI	SI	SI	SI	SI	SI	

**Notes:**  
 T - Straight Tee  
 SI - Stub-In (See Note 1)  
 S - 3000# Threadolet

- 1) Stub-ins shall be as per ANSI B31.3. Where reinforcement is required use pad-type reinforcement.
- 2) Elbowlets (threaded) shall be used in lieu of threadolets for temperature connections located at elbows. Minimum size elbows with temperature connection shall be 3" NPS. Where line is 2" NPS and smaller increase size to 3" NPS at elbow.
- 3) Any deviation from the connection type shown in the above table or branch connections for larger piping sizes shall be approved in writing by OWNER.
- 4) Use 2" NPS tee with 2' x 1" swage




JAPAN CANADA OIL SANDS LIMITED

*SPECIFICATIONS*

VALVE SPECIFICATIONS	J5053

DATE	REVISION	AUTHOR	TECHNICAL MANAGER	V.P. OPERATIONS
AUGUST 21, 1998	A	M.E.G.	-	-
MARCH 15, 2004	B	B. A.		
March 24, 2004	C	B. A.		

 JAPAN CANADA OIL SANDS LIMITED <i>SPECIFICATIONS</i>	
VALVE SPECIFICATIONS	J5053

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VALVE SPECIFICATIONS	J5053

## 1.0 SCOPE

- 1.1 This specification covers the general requirements for manual valves used in hydrocarbon processing plants and facilities, whether field or shop installed.
- 1.2 The intent of this specification is to serve as a guideline for valve selection, but not to limit the choice of valves, given special service conditions and new or unique valve technology.

## 2.0 CODES, REGULATIONS AND STANDARDS

- 2.1 Valves shall meet or exceed the requirements of the latest edition of all applicable codes, regulations and standards, except as superseded herein. In cases where more than one code, regulation or standard apply to the same condition, the most stringent shall be followed. In the event of a conflict between this specification and other specifications or correspondence, the OWNER shall be consulted and a ruling, in writing, shall be obtained before any work is started. Reference codes, regulations and standards include, but are not necessarily limited to the following:

- ASME Boiler and Pressure Vessel Code, all applicable sections.
- ANSI/ASME B16.34, Valves - Flanged, Threaded and Welding End
- ANSI/ASME B31.1, Power Piping
- ANSI/ASME B31.3, Chemical Plant and Petroleum Refinery Piping
- ANSI/ASME B31.4, Liquid Transportation Systems for Hydrocarbons
- ANSI/ASME B31.5, Refrigeration Piping
- ANSI/ASME B31.8, Gas Transmission and Distribution Piping Systems
- API Std. 598, Valve Inspection and Testing
- API Std. 600, Steel Gate Valves, Flanged and Butt-Welding Ends
- API Std. 602, Compact Steel Gate Valves
- NACE Standard MR-01-75, Sulfide Stress Cracking Resistant Metallic Materials for Oil Field Equipment
- Z-183, CSA Standard for Oil Pipeline Transportation Systems
- Z-184, CSA Standard for Gas Transmission and Distribution Piping Systems
- Regulations, Codes and Statutes of the Authorities having jurisdiction in the location of installation.

- 2.2 The following JACOS Specifications shall be used in conjunction with this specification where applicable:

J5010 Piping Design and Layout



VALVE SPECIFICATIONS	J5053

- J5020 Piping Fabrication and Testing
- J5050 Piping Materials
- J5051 Piping Materials - Sour Service Supplement
- J5052 Piping Materials - Low Temperature Supplement

- 2.3 Some requirements in this specification may be modified by specific requirements in the purchase specification. In case of conflict, the specific requirements supersede this specification.
- 2.4 Any deviation from this specification must be approved, in writing, by OWNER. Such written approval must be obtained prior to the commencement of any work which would constitute such a deviation.

### 3.0 GENERAL

#### 3.1 General

- 3.1.1 All materials and installation shall be in accordance with code requirements and industry standards for good workmanship.

#### 3.2 Valve Identification

- 3.2.1 Each valve in a facility shall be designated by a descriptive valve identification number consisting of the following identifiers:

- Nominal Valve Size (inches NPS)
- Valve Type
- End Connection
- Primary Pressure Rating
- Valve Trim
- Miscellaneous Modifiers

e.g., 10"-BA-1010-G, specifies:

- 10" - Nominal valve size.
- BA - Valve Type (Ball Valve).
- 1 - End Connection (Raised face flanged).
- 01 - Primary Pressure Rating (ANSI Class 150).
- 0 - Valve Trim (Sweet Service).
- G - Modifier (Gear operator - instead of standard lever).



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3.2.2 Appendix A provides a detailed listing of valve identifiers which shall be used.

3.2.3 The basic valve designations, without modifiers are standard valves with standard operators for sweet, non-corrosive, warm service. A modifier symbol or symbols are added to change the specifications of the valves to meet the requirements for special services, temperatures and operators.

Modifiers normally take precedence over the other identifiers in the valve number.

### 3.3 Valve Tagging

Each valve shall be supplied with a metal tag attached to the valve with a metal wire, and stamped with the valve code number. Other special information, such as type of internal coating, shall also be identified on the metal tag.

## 4.0 DESIGN

- 4.1 Flanged valves 2" and larger and all flanged valves in pressure Class 900 or higher shall conform to or exceed the requirements of ANSI B16.34 and API 600. Screwed valves and Class 600 or lower flanged valves 2" and smaller shall conform to API 602, except union body-bonnet joints shall not be used.
- 4.2 Valves may be cast or forged steel depending upon the operating conditions. In critical service forged valves are preferred.
- 4.3 Materials shall be carbon steel from ANSI B16.5, or ANSI B16.34, material groups 1.1, 1.3 or 1.4 unless otherwise specified by OWNER. Carbon steel materials shall be normalized or normalized and tempered.
- 4.4 Globe and gate valves shall have outside stem and yoke with bolted, welded, or pressure seal bonnets. Bonnets on check valves shall be bolted, welded or pressure seal. Screwed bonnets or union bonnets shall not be used. Bonnet bolts shall be ASTM A193 Grade B7. On all check and globe valves, the direction of flow shall be cast, stamped or forged on the valve body.
- 4.5 Trim materials shall conform to API Standard 600, Table 3 and be suitable for the proposed service. For valves specified under API 602, trim materials shall conform to





<b>VALVE SPECIFICATIONS</b>	<b>J5053</b>

Table 10. Trim materials, particularly stainless steels, should be selected to prevent galling. Low melting point alloys shall not be used.

- 4.6 Valve stem packing material for globe and gate valves shall be graphite in all services except oxygen and other services where graphite will react with the enclosed fluid. The packing shall be installed with corrosion inhibitor and shall consist of braided top and bottom rings and die-formed mid-rings.
- 4.7 Ball valves for hydrocarbon liquid or vapour services shall be fire safe. Ball valves deemed critical to the facility shutdown and blow-down shall be fire safe to API 607.
- 4.8 Gate valves are preferred for block valves.
- 4.9 Plug valves are not recommended in services exceeding 175°C and may not be used without OWNER specific approval.
- 4.10 Valves in steam or steam condensate service (i.e., Piping Classes “XH”) shall meet the following requirements:
  - 4.10.1 Ball valves shall not be used in piping having design temperatures in excess of 200°C.
  - 4.10.2 ½” to 1½” NPS valves in 300#, 600# and 900# services shall generally have socket weld connections. Threaded or socket weld by threaded valves may be used as secondary instrument isolation valves or the second block valve or bleed valve in double block and bleed drain or vent connections. These valves shall also have welded bonnets.
  - 4.10.3 Drain and vent valves in these piping classes shall be one-plane gusseted.
  - 4.10.4 2” NPS and larger valves in 300# service and above shall have bolted bonnets and flanged connections.
  - 4.10.5 Stop valves in 600# and 900# services shall preferably be Y-Body globe valves with renewable seats, in sizes 2”, 3”, and 4”, larger valves shall be flexible wedge gate valves. Consideration shall be given to using parallel slide gate valves in these services when the valve is to be motor operated (i.e., electric, hydraulic or pneumatic actuator).
  - 4.10.6 All valves in these piping classes shall have Stellite sealing surfaces on both the seats and the closing elements. Stellite facing will be acceptable.



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- 4.11 Gate valves shall not be used at temperatures below -45°C.
- 4.12 Cast iron, semi-steel or ductile iron valves may not be used without OWNER specific approval.
- 4.13 Low temperature and cryogenic service valves shall meet the code impact resistance requirements to -45°C and -101°C respectively. Test certificates must be provided.
- 4.14 Sour service valves shall meet the requirements of NACE Standard MR-01-75.
- 4.15 The type of coating for internally coated valves shall be specified for each project and service by the project engineer and shown on the mechanical flow diagram.
- 4.16 Gear operators shall be provided as follows:

**Class 150 and 300 ANSI**

- Butterfly valves NPS 8" and larger.
- Ball valves NPS 8" and larger.
- Plug valves NPS 6" and larger.
- Gate valves NPS 12" and larger.

**Class 600 ANSI and Over**

- Ball and plug valves NPS 6" and larger.
- Gate valves NPS 8" and larger.

- 4.17 Lined valves installed on AZ piping need not comply with API 600 or API 602. Further, ductile or cast iron materials shall be allowed for valves in this service.

## 5.0 INSTALLATION

- 5.1 Wherever possible, valves should be kept near grade level. All operating valves installed 2100 mm or more above floor, platform or other point of easy access shall be hammer blow chain wheel operated. Hammer blow chain wheels shall have U-bolt clamps, not J-bolt clamps.
- 5.2 Hand wheels and stems shall be kept out of operating aisles, where practical, otherwise elevated to 2100 mm from grade to bottom of hand wheel.
- 5.3 Valves shall not be installed with stems below a horizontal position.





VALVE SPECIFICATIONS	J5053

- 5.4 Block valves, when required, shall be installed at nozzles of pressure vessels or in lines connected to nozzles to permit operating valves from grade or a platform. Equipment shall be capable of being isolated either if:
- Operations can continue without it.
  - Or if depressuring associated facilities will delay maintenance on the equipment.
- 5.5 If a gate valve will be opened while there is a high pressure difference across the wedge, consideration shall be given to providing the valve with an equalizing globe valve bypass, a minimum size of NPS 1", in the following main valve sizes:
- Class ANSI 150 - NPS 12" and larger.
  - Class ANSI 300 and greater - NPS 8" and larger.
- 5.6 All valves shall have sufficient clearance to facilitate removal of the bonnets, plugs and internals.
- 5.7 Ball valves shall not be used for throttling service.

## 6.0 VALVE SELECTION

Valves shall be selected in accordance with the application and service conditions in which the valve is placed.



# JAPAN CANADA OIL SANDS LIMITED

## SPECIFICATIONS

VALVE SPECIFICATIONS	J5053

PRIMARY PRESSURE RATING						MISCELLANEOUS	
01	150# ANSI					WP	WEIR PATTERN
03	300# ANSI					TA	TANTALUM WETTED PARTS
06	600# ANSI					-	REGULAR PORT
08	API CLASS 800					C	CHAIN OPERATED
09	900# ANSI					E	ELONGATED STEM
15	1500# ANSI					F	FULL PORT
25	2500# ANSI					H	HIGH TEMPERATURE
60	6000 PSI CWP					T	STEM EXTENSION
100	10000 PSI CWP					W	WAFER
VALVE TYPE							
IBB	INSTRUMENT with INTEGRAL BLOCK & BLEED					P	PRESSURE STEM SEAL
D	DIAPHRAM					S	STAINLESS STEEL BODY
BA	BALL					G	GEAR OPERATED
BU	BUTTERFLY					V	VERTICAL
CH	CHECK					X*	SHORT PATTERN BALL VALVE
GA	GATE					M	TRUNION MOUNTED BALL
GL	GLOBE	GA-	1	09	0	Y	Y-BODY GLOBE
NE	NEEDLE					L	PARALLEL SLIDE GATE
BD	BLOWDOWN						
SC	STOPCHECK					VALVE TRIM	
TC	THRU CONDUIT GATE					0	SWEET
WC	WAFER CHECK					1	STEAM, CONDENSATE
P	PLUG					2	SOUR (NACE W/TAG)
						3	LOW TEMP. SWEET/SOUR
						4	CRYOGENIC SWEET
END PREPARATION						5	PTFE LINED
0	FLANGED/SCREWED					6	TFE LINED
1	FLANGED (RF)					7	PFA or PTFE LINED
2	SOCKET WELD					8	CORROSIVE CHEMICAL
3	SCREWED						
4	MNPT X FNPT						
5	SOCKET WELD X SCREWED						
6	COMPRESSION						
7	WELDOLET X SCREWED						
8	FLANGED (RTJ)						
9	BUTT WELD						

\* Note: No "x" means a long pattern valve body is required



JAPAN CANADA OIL SANDS LIMITED

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VALVE SPECIFICATIONS	J5053

APPENDIX A  
VALVE IDENTIFICATION NUMBERS



# JAPAN CANADA OIL SANDS LIMITED

## SPECIFICATIONS

### VALVE SPECIFICATIONS

J5053

#### CHECK VALVE TECHNICAL REQUIREMENTS

Tag #	Temp Rtg °C	ANSI Class	Ends	Size (NPS)	Bonnet	Seat Type	NACE	Body Mat'l	Seat Mat'l	Disc Mat'l	Bolting Mat'l
CH-1010	-29 / 250	150	RF Flg	2 - 24	Bolted	Renewable	No	A216 WCB	13 Cr	13 Cr	B7 / 2H
CH-1011	-29 / 378	150	RF Flg	2 - 24	Bolted	Integral	No	A216 WCB	Stellite	Stellite	B7 / 2H
CH-1012	-29 / 250	150	RF Flg	2 - 24	Bolted	Renewable	Yes	A216 WCB	304 / 316 SS	304 / 316 SS	B7M / 2HM
CH-1013	-46 / 250	150	RF Flg	2 - 24	Bolted	Renewable	Yes	A352 LCB / LCC	304 / 316 SS	304 / 316 SS	L7M / 7M
CH-1013S	-45 / 148	150	RF Flg	2 - 12	Bolted	Renewable	Yes	A351 CF8M / A182 F316	316SS	316SS	SS
CH-1017	-29 / 250	150	RF Flg	2 - 6	Bolted	Integral	No	A 216 WCB / Ductile Iron	PTFE Lined	PTFE Ball	B7 / 2H
CH-1030	-29 / 250	300	RF Flg	2 - 24	Bolted	Renewable	No	A216 WCB	13 Cr	13 Cr	B7 / 2H
CH-1031	-29 / 378	300	RF Flg	2 - 24	Bolted	Integral	No	A216 WCB	Stellite	Stellite	B7 / 2H
CH-1032	-29 / 250	300	RF Flg	2 - 24	Bolted	Renewable	Yes	A216 WCB	304 / 316 SS	304 / 316 SS	B7M / 2HM
CH-1033	-46 / 250	300	RF Flg	2 - 24	Bolted	Renewable	Yes	A352 LCB / LCC	304 / 316 SS	304 / 316 SS	L7M / 7M
CH-1060	-29 / 250	600	RF Flg	2 - 24	Bolted	Renewable	No	A216 WCB	13 Cr	13 Cr	B7 / 2H
CH-1061	-29 / 378	600	RF Flg	2 - 24	Bolted	Integral	No	A216 WCB	Stellite	Stellite	B7 / 2H
CH-1062	-29 / 250	600	RF Flg	2 - 24	Bolted	Renewable	Yes	A216 WCB	304 / 316 SS	304 / 316 SS	B7M / 2HM
CH-1063	-46 / 250	600	RF Flg	2 - 24	Bolted	Renewable	Yes	A352 LCB / LCC	304 / 316 SS	304 / 316 SS	L7M / 7M
CH-1090	-29 / 250	900	RF Flg	2 - 24	Bolted	Renewable	No	A216 WCB	13 Cr	13 Cr	B7 / 2H
CH-2080	-29 / 250	800	SW	½ - 1½	Bolted	Integral	No	A105	13 Cr/Stell.	13 Cr.	B7 / 2H
CH-2081	-29 / 378	800	SW	½ - 1½	Welded	Integral	No	A105	Stellite	Stellite	
CH-2082	-29 / 250	800	SW	½ - 1½	Bolted	Integral	Yes	A105	304 / 316 SS	304 / 316 SS	B7M / 2HM
CH-2083	-46 / 250	800	SW	½ - 1½	Bolted	Integral	Yes	A350 LF2	304 / 316 SS	304 / 316 SS	L7M / 7M
CH-2083S	-45 / 148	800	SW	½ - 1½	Bolted	Integral	Yes	A182 F316	316SS	316SS	SS
CH-2150	-29 / 250	1500	SW	½ - 1½	Bolted	Integral	No	A105	13 Cr / Stellite	13 Cr	B7 / 2H
CH-2151	-29 / 378	1500	SW	½ - 1½	Welded	Integral	No	A105	Stellite	Stellite	
CH-3080	-29 / 250	800	Thr'd	½ - 1½	Bolted	Integral	No	A105	13 Cr / Stellite	13 Cr.	B7 / 2H
CH-3081	-29 / 378	800	Thr'd	½ - 1½	Welded	Integral	No	A105	Stellite	Stellite	
CH-3082	-29 / 250	800	Thr'd	½ - 1½	Bolted	Integral	Yes	A105	304 / 316 SS	304 / 316 SS	B7M / 2HM
CH-3083	-46 / 250	800	Thr'd	½ - 1½	Bolted	Integral	Yes	A350 LF2	304 / 316 SS	304 / 316 SS	L7M / 7M



JAPAN CANADA OIL SANDS LIMITED

**SPECIFICATIONS**

**VALVE SPECIFICATIONS**

**J5053**

**CHECK VALVE TECHNICAL REQUIREMENTS**

Tag #	Temp Rtg °C	ANSI Class	Ends	Size (NPS)	Bonnet	Seat Type	NACE	Body Mat'l	Seat Mat'l	Disc Mat'l	Bolting Mat'l
CH-3150	-29 / 250	1500	Thr'd	½ - 1½	Bolted	Integral	No	A105	13 Cr / Stellite	13 Cr	B7 / 2H
CH-3151	-29 / 378	1500	Thr'd	½ - 1½	Welded	Integral	No	A105	Stellite	Stellite	
CH-8091	-29 / 378	900	RJ Flg	3 - 24	Bolted	Integral	No	A216 WCB	Stellite	Stellite	B7 / 2H
CH-8151	-29 / 378	1500	RJ Flg	2	Bolted	Integral	No	A 105 / A216 WCB	Stellite	Stellite	B7 / 2H

**Gate Valve Technical Requirements**

Tag #	Temp Rtg °C	ANSI Class	Ends	Size (NPS)	Port	Bonnet	Seat Type	Wedge Type	NACE	Body Mat'l	Seat Mat'l	Stem Mat'l	Wedge Mat'l	Bolting Mat'l
GA-1010	-29 / 250	150	RF Flg	2 - 24	Full	Bolted	Renewable	Flexible	No	A216 WCB	13 Cr	13 Cr	13 Cr	B7 / 2H
GA-1011	-29 / 378	150	RF Flg	2 - 24	Full	Bolted	Integral	Flexible	No	A216 WCB	Stellite	410SS	Stellite	B7 / 2H
GA-1012	-29 / 250	150	RF Flg	2 - 24	Full	Bolted	Renewable	Flexible	Yes	A216 WCB	304 / 316SS	304 / 316SS	304 / 316SS	B7M / 2HM
GA-1013	-46 / 250	150	RF Flg	2 - 24	Full	Bolted	Renewable	Flexible	Yes	A352-LCB / LCC	304 / 316SS	304 / 316SS	304 / 316SS	L7M / 7M
GA-1013S	-45 / 148	150	RF Flg	2 - 12	Reg	Bolted	Integral	Flexible	Yes	A351 CF8M	316SS	316SS	316SS	B8 / Gr.8
GA-1030	-29 / 250	300	RF Flg	2 - 24	Full	Bolted	Renewable	Flexible	No	A216 WCB	13 Cr	13 Cr	13 Cr	B7 / 2H
GA-1031	-29 / 378	300	RF Flg	2 - 24	Full	Bolted	Integral	Flexible	No	A216 WCB	Stellite	410SS	Stellite	B7 / 2H
GA-1032	-29 / 250	300	RF Flg	2 - 24	Full	Bolted	Renewable	Flexible	Yes	A216 WCB	304 / 316SS	304 / 316SS	304 / 316SS	B7M / 2HM
GA-1033	-46 / 250	300	RF Flg	2 - 24	Full	Bolted	Renewable	Flexible	Yes	A352-LCB / LCC	304 / 316SS	304 / 316SS	304 / 316SS	L7M / 7M





JAPAN CANADA OIL SANDS LIMITED

**SPECIFICATIONS**

**VALVE SPECIFICATIONS**

**J5053**

Gate Valve Technical Requirements														
Tag #	Temp Rtg °C	ANSI Class	Ends	Size (NPS)	Port	Bonnet	Seat Type	Wedge Type	NACE	Body Mat'l	Seat Mat'l	Stem Mat'l	Wedge Mat'l	Bolting Mat'l
GA-1060	-29 / 250	600	RF Flg	2 - 24	Full	Bolted	Renewable	Flexible	No	A216 WCB	13 Cr	13 Cr	13 Cr	B7 / 2H
GA-1061	-29 / 378	600	RF Flg	2 - 24	Full	Bolted	Integral	Flexible	No	A216 WCB	Stellite	410SS	Stellite	B7 / 2H
GA-1062	-29 / 250	600	RF Flg	2 - 24	Full	Bolted	Renewable	Flexible	Yes	A216 WCB	304 / 316SS	304 / 316SS	304 / 316SS	B7M / 2HM
GA-1063	-46 / 250	600	RF Flg	2 - 24	Full	Bolted	Renewable	Flexible	Yes	A352-LCB / LCC	304 / 316SS	304 / 316SS	304 / 316SS	L7M / 7M
GA-1090	-29 / 250	900	RF Flg	2 - 24	Full	Bolted	Renewable	Flexible	No	A216 WCB	13 Cr	13 Cr	13 Cr	B7 / 2H
GA-2080	-29 / 250	800	SW	½ - 1½	Reg	Bolted	Integral	Solid	No	A105	Stellite	13 Cr	13 Cr	B7 / 2H
GA-2081	-29 / 378	800	SW	½ - 1½	Reg	Welded	Integral	Solid	No	A105	Stellite	410SS	Stellite	
GA-2082	-29 / 250	800	SW	½ - 1½	Reg	Bolted	Integral	Solid	Yes	A105	304 / 316SS	304 / 316SS	304 / 316SS	B7M / 2HM
GA-2083	-46 / 250	800	SW	½ - 1½	Reg	Bolted	Integral	Solid	Yes	A350 LF2	304 / 316SS	304 / 316SS	304 / 316SS	L7M / 7M
GA-2083S	-45 / 148	800	SW	½ - 1½	Reg	Bolted	Integral	Solid	Yes	A182 F316	316SS	316SS	316SS	B8 / Gr.8
GA-2150	-29 / 250	1500	SW	½ - 1½	Reg	Bolted	Integral	Solid	No	A105	Stellite	13 Cr	13 Cr	B7 / 2H
GA-3080	-29 / 250	800	Th'd	½ - 1½	Reg	Bolted	Integral	Solid	No	A105	Stellite	13 Cr	13 Cr	B7 / 2H
GA-3081	-29 / 378	800	Th'd	½ - 1½	Reg	Welded	Integral	Solid	No	A105	Stellite	410SS	Stellite	
GA-3082	-29 /	800	Th'd	½ - 1½	Reg	Bolted	Integral	Solid	Yes	A105	304 / 316SS	304 / 316SS	304 / 316SS	B7M /



# JAPAN CANADA OIL SANDS LIMITED

## SPECIFICATIONS

### VALVE SPECIFICATIONS

**J5053**

#### Gate Valve Technical Requirements

Tag #	Temp Rtg °C	ANSI Class	Ends	Size (NPS)	Port	Bonnet	Seat Type	Wedge Type	NACE	Body Mat'l	Seat Mat'l	Stem Mat'l	Wedge Mat'l	Bolting Mat'l
	250													2HM
GA-3083	-46 / 250	800	Th'd	½ - 1½	Reg	Bolted	Integral	Solid	Yes	A350 LF2	304 / 316SS	304 / 316SS	304 / 316SS	L7M / 7M
GA-3150	-29 / 250	1500	Th'd	½ - 1½	Reg	Bolted	Integral	Solid	No	A105	Stellite	13 Cr	13 Cr	B7 / 2H
GA-5080	-29 / 250	800	Th'd x SW	½ - 1½	Reg	Bolted	Integral	Solid	No	A105	Stellite	13 Cr	13 Cr	B7 / 2H
GA-5081	-29 / 378	800	Th'd x SW	½ - 1½	Reg	Welded	Integral	Solid	No	A105	Stellite	410SS	Stellite	
GA-5082	-29 / 250	800	Th'd x SW	½ - 1½	Reg	Bolted	Integral	Solid	Yes	A105	304 / 316SS	304 / 316SS	304 / 316SS	B7M / 2HM
GA-5083	-46 / 250	800	Th'd x SW	½ - 1½	Reg	Bolted	Integral	Solid	Yes	A350 LF2	304 / 316SS	304 / 316SS	304 / 316SS	L7M / 7M
GA-5083S	-45 / 148	800	Th'd x SW	½ - 1½	Reg	Bolted	Integral	Solid	Yes	A182 F316	316SS	316SS	316SS	B8 / Gr.8
GA-5150	-29 / 250	1500	Th'd x SW	½ - 1½	Reg	Bolted	Integral	Solid	No	A105	Stellite	13 Cr	13 Cr	B7 / 2H
GA-8091	-29 / 378	900	RJ Flg	3 - 24	Full	Bolted	Integral	Flexible	No	A216 WCB	Stellite	410 SS	Stellite	B7 / 2H
GA-8151	-29 / 378	1500	RJ Flg	2	Full	Bolted	Integral	Flexible	No	A105 / A216 WCB	Stellite	410 SS	Stellite	B7 / 2H

#### Globe Valve Technical Requirements

Tag #	Temp Rtg °C	ANSI Class	Ends	Size (NPS)	Bonnet	Seat Type	NACE	Body Mat'l	Seat Mat'l	Stem Mat'l	Disc Wedge Mat'l	Bolting Mat'l
GL-1010	-29 / 250	150	RF Flg	2 - 6	Bolted	Renewable	No	A216 WCB	13 Cr	13 Cr	13 Cr	B7 / 2H



# JAPAN CANADA OIL SANDS LIMITED

## SPECIFICATIONS

### VALVE SPECIFICATIONS

J5053

#### Globe Valve Technical Requirements

Tag #	Temp Rtg °C	ANSI Class	Ends	Size (NPS)	Bonnet	Seat Type	NACE	Body Mat'l	Seat Mat'l	Stem Mat'l	Disc Wedge Mat'l	Bolting Mat'l
GL-1011	-29 / 378	150	RF Flg	2 - 6	Bolted	Integral	No	A216 WCB	Stellite	410SS	Stellite	B7 / 2H
GL-1012	-29 / 250	150	RF Flg	2 - 6	Bolted	Renewable	Yes	A216 WCB	304 / 316SS	304 / 316SS	304 / 316SS	B7M / 2HM
GL-1013	-46 / 250	150	RF Flg	2 - 6	Bolted	Renewable	Yes	A352-LCB / LCC	304 / 316SS	304 / 316SS	304 / 316SS	L7M / 7M
GL-1013S	-45 / 148	150	RF Flg	2 - 6	Bolted	Integral	Yes	A351 CF8M	316SS	316SS	316SS	B8 / Gr. 8
GL-1030	-29 / 250	300	RF Flg	2 - 6	Bolted	Renewable	No	A216 WCB	13 Cr	13 Cr	13 Cr	B7 / 2H
GL-1031	-29 / 378	300	RF Flg	2 - 6	Bolted	Integral	No	A216 WCB	Stellite	410SS	Stellite	B7 / 2H
GL-1032	-29 / 250	300	RF Flg	2 - 6	Bolted	Renewable	Yes	A216 WCB	304 / 316SS	304 / 316SS	304 / 316SS	B7M / 2HM
GL-1033	-46 / 250	300	RF Flg	2 - 6	Bolted	Renewable	Yes	A352-LCB / LCC	304 / 316SS	304 / 316SS	304 / 316SS	L7M / 7M
GL-1060	-29 / 250	600	RF Flg	2 - 6	Bolted	Renewable	No	A216 WCB	13 Cr	13 Cr	13 Cr	B7 / 2H
GL-1061	-29 / 378	600	RF Flg	2 - 6	Bolted	Integral	No	A216 WCB	Stellite	410SS	Stellite	B7 / 2H
GL-1062	-29 / 250	600	RF Flg	2 - 6	Bolted	Renewable	Yes	A216 WCB	304 / 316SS	304 / 316SS	304 / 316SS	B7M / 2HM
GL-1063	-46 / 250	600	RF Flg	2 - 6	Bolted	Renewable	Yes	A352-LCB / LCC	304 / 316SS	304 / 316SS	304 / 316SS	L7M / 7M
GL-1090	-29 / 250	900	RF Flg	2 - 6	Bolted	Renewable	No	A216 WCB	13 Cr	13 Cr	13 Cr	B7 / 2H
GL-2080	-29 / 250	800	SW	½ - 1½	Bolted	Integral	No	A105	Stellite	410SS	Stellite	B7 / 2H
GL-2081	-29 / 378	800	SW	½ - 1½	Welded	Integral	No	A105	Stellite	410SS	Stellite	
GL-2082	-29 / 250	800	SW	½ - 1½	Bolted	Integral	Yes	A105	304 / 316SS	304 / 316SS	304 / 316SS	B7M / 2HM
GL-2083	-46 / 250	800	SW	½ - 1½	Bolted	Integral	Yes	A350 LF2	304 / 316SS	304 / 316SS	304 / 316SS	L7M / 7M
GL-2083S	-45 / 148	800	SW	½ - 1½	Bolted	Integral	Yes	A182 F316	316SS	316SS	316SS	B8 / Gr.8
GL-2150	-29 / 250	1500	SW	½ - 1½	Bolted	Integral	No	A105	Stellite	13 Cr	13 Cr	B7 / 2H
GL-2151	-29 / 378	1500	SW	½ - 1½	Welded	Integral	No	A105	Stellite	410SS	Stellite	
GL-3080	-29 / 250	800	Th'd	½ - 1½	Bolted	Integral	No	A105	Stellite	13 Cr	13 Cr	B7 / 2H
GL-3081	-29 / 378	800	Th'd	½ - 1½	Welded	Integral	No	A105	Stellite	410SS	Stellite	
GL-3082	-29 / 250	800	Th'd	½ - 1½	Bolted	Integral	Yes	A105	304 / 316SS	304 / 316SS	304 / 316SS	B7M / 2HM
GL-3083	-46 / 250	800	Th'd	½ - 1½	Bolted	Integral	Yes	A350 LF2	304 / 316SS	304 / 316SS	304 / 316SS	L7M / 7M
GL-3150	-29 / 250	1500	Th'd	½ - 1½	Bolted	Integral	No	A105	Stellite	13 Cr	13 Cr	B7 / 2H
GL-3151	-29 / 378	1500	Th'd	½ - 1½	Welded	Integral	No	A105	Stellite	410SS	Stellite	



JAPAN CANADA OIL SANDS LIMITED

**SPECIFICATIONS**

**VALVE SPECIFICATIONS**

**J5053**

**Globe Valve Technical Requirements**

Tag #	Temp Rtg °C	ANSI Class	Ends	Size (NPS)	Bonnet	Seat Type	NACE	Body Mat'l	Seat Mat'l	Stem Mat'l	Disc Wedge Mat'l	Bolting Mat'l
GL-5080	-29 / 250	800	Th'd x SW	½ - 1½	Bolted	Integral	No	A105	Stellite	13 Cr	13 Cr	B7 / 2H
GL-5081	-29 / 378	800	Th'd x SW	½ - 1½	Welded	Integral	No	A105	Stellite	410SS	Stellite	B7 / 2H
GL-5082	-29 / 250	800	Th'd x SW	½ - 1½	Bolted	Integral	Yes	A105	304 / 316SS	304 / 316SS	304 / 316SS	B7M / 2HM
GL-5083	-46 / 250	800	Th'd x SW	½ - 1½	Bolted	Integral	Yes	A350 LF2	304 / 316SS	304 / 316SS	304 / 316SS	L7M / 7M
GL-5150	-29 / 250	1500	Th'd x SW	½ - 1½	Bolted	Integral	No	A105	Stellite	13 Cr	13 Cr	B7 / 2H
GL-5151	-29 / 378	1500	Th'd x SW	½ - 1½	Welded	Integral	No	A105	Stellite	410SS	Stellite	
GL-8091	-29 / 378	900	RJ Flg	3 - 6	Bolted	Integral	No	A216 WCB	Stellite	410 SS	Stellite	B7 / 2H
GL-8151	-29 / 378	1500	RJ Flg	2	Bolted	Integral	No	A105 / A216 WCB	Stellite	410 SS	Stellite	B7 / 2H

**Ball Valve Technical Requirements**

Tag #	Temp Rtg °C	ANSI Class	Ends	Size (NPS)	Body Type	Fire Safe	NACE	Body Mat'l	Ball Mat'l	Body Seal Mat'l	Seat Mat'l	Packing Mat'l	Bolting Mat'l
BA-1010	-29 / 200	150	RF Flg	2 - 12	2-Piece	Yes	No	A-105 / 216-WCB / WCC	CS, Cr Pl or ENC	TFE / Graphite	Filled TFE	Braided Graphite	B7 / 2H
BA-1012	-29 / 200	150	RF Flg	2 - 12	2-Piece	Yes	Yes	A-105 / 216-WCB / WCC	A351 CF8M / A182 F316	TFE / Graphite	Filled TFE	Braided Graphite	B7M / 2HM
BA-1013	-45 / 200	150	RF Flg	2 - 12	2-Piece	Yes	Yes	A-350-LF2 / 352-LCB / LCC	A351 CF8M / A182 F316	TFE / Graphite	Filled TFE	Braided Graphite	L7M / 7M
BA-1013S	-45/148	150	RF Flg	2 - 8	2-Piece	Yes	Yes	A351 CF8M	316SS	RTFE	Filled TFE	Braided Graphite	B8 / Gr.8A





JAPAN CANADA OIL SANDS LIMITED

**SPECIFICATIONS**

**VALVE SPECIFICATIONS**

**J5053**

Ball Valve Technical Requirements													
Tag #	Temp Rtg °C	ANSI Class	Ends	Size (NPS)	Body Type	Fire Safe	NACE	Body Mat'l	Ball Mat'l	Body Seal Mat'l	Seat Mat'l	Packing Mat'l	Bolting Mat'l
BA-1030	-29 / 250	300	RF Flg	2 - 12	2-Piece	Yes	No	A-105 / 216-WCB / WCC	CS, Cr Pl or ENC	TFE / Graphite	Filled TFE	Braided Graphite	B7 / 2H
BA-1032	-29 / 200	300	RF Flg	2 - 12	2-Piece	Yes	Yes	A-105 / 216-WCB / WCC	A351 CF8M / A182 F316	TFE / Graphite	Filled TFE	Braided Graphite	B7M / 2HM
BA-1033	-45 / 200	300	RF Flg	2 - 12	2-Piece	Yes	Yes	A-350-LF2 / 352-LCB / LCC	A351 CF8M / A182 F316	TFE / Graphite	Filled TFE	Braided Graphite	L7M / 7M
BA-1060	-29 / 200	600	RF Flg	2 - 12	2-Piece	Yes	No	A-105 / 216-WCB / WCC	CS, Cr Pl or ENC	TFE/ Viton/ Graphite	Filled TFE	Braided Graphite	B7 / 2H
BA-1062	-29 / 200	600	RF Flg	2 - 12	2-Piece	Yes	Yes	A-105 / 216-WCB / WCC	A351 CF8M / A182 F316	TFE/ Viton/ Graphite	Filled TFE	Braided Graphite	B7M / 2HM
BA-1063	-45 / 200	600	RF Flg	2 - 12	2-Piece	Yes	Yes	A-350-LF2 / 352-LCB / LCC	A351 CF8M / A182 F316	TFE / Graphite	Filled TFE	Braided Graphite	L7M / 7M
BA-1090	-29 / 200	900	RF Flg	2 - 12	2-Piece	Yes	No	A-105 / 216-WCB / WCC	CS, Cr Pl or ENC	TFE/ Viton/ Graphite	Filled TFE	Braided Graphite	B7 / 2H
BA-2060	-29 / 200	600	SW	½ - 1½	1 or 3-Piece	Yes	No	A-105	CS, Cr Pl or ENC	TFE / Graphite	Filled TFE	Braided Graphite	
BA-2062	-29 / 200	600	SW	½ - 1½	1 or 3-Piece	Yes	Yes	A-105	A351 CF8M/ A182 F316	TFE / Graphite	Filled TFE	Braided Graphite	
BA-2063	-45 / 200	600	SW	½ - 1½	1 or 3-Piece	Yes	Yes	A-350-LF2	A351 CF8M / A182 F316	TFE / Graphite	Filled TFE	Braided Graphite	
BA-2063S	-45 / 148	600	SW	½ - 1½	1 or 3-Piece	Yes	Yes	A351 CF8M	316SS	Filled TFE	Filled TFE	Braided Graphite	B8 / Gr.8A
BA-3060	-29 / 200	600	Th'd	½ - 1½	1 or 3-Piece	Yes	No	A-105	CS, Cr Pl or ENC	TFE / Graphite	Filled TFE	Braided Graphite	





# JAPAN CANADA OIL SANDS LIMITED

## SPECIFICATIONS

### VALVE SPECIFICATIONS

J5053

#### Ball Valve Technical Requirements

Tag #	Temp Rtg °C	ANSI Class	Ends	Size (NPS)	Body Type	Fire Safe	NACE	Body Mat'l	Ball Mat'l	Body Seal Mat'l	Seat Mat'l	Packing Mat'l	Bolting Mat'l
BA-3062	-29 / 200	600	Th'd	½ - 1½	1 or 3-Piece	Yes	Yes	A-105	A351 CF8M / A182 F316	TFE / Graphite	Filled TFE	Braided Graphite	
BA-3063	-45 / 200	600	Th'd	½ - 1½	1 or 3-Piece	Yes	Yes	A-350 LF2	A351 CF8M / A182 F316	TFE / Graphite	Filled TFE	Braided Graphite	
BA-5060	-29 / 200	600	Th'd x SW	½ - 1½	1 or 3-Piece	Yes	No	A-105	CS, Cr Pl or ENC	TFE / Graphite	Filled TFE	Braided Graphite	
BA-5062	-29 / 200	600	Th'd x SW	½ - 1½	1 or 3-Piece	Yes	Yes	A-105	A351 CF8M / A182 F316	TFE / Graphite	Filled TFE	Braided Graphite	
BA-5063	-45 / 200	600	Th'd x SW	½ - 1½	1 or 3-Piece	Yes	Yes	A-350 LF2	A351 CF8M / A182 F316	TFE / Graphite	Filled TFE	Braided Graphite	
BA-5063S	-45 / 148	600	Th'd x SW	½ - 1½	1 or 3-Piece	Yes	Yes	A351 CF8M	316SS	Filled TFE	Filled TFE	Braided Graphite	

#### Needle Valve Technical Requirements

Tag #	Temp Rtg °C	Cold Press. Rtg. (PSI)	Ends	Size (NPS)	Bonnet	Seat Type	NACE	Body Mat'l	Bonnet Mat'l	Stem Mat'l	Packing Mat'l	Studs/ Nuts
NE-3600	-29 / 250	6000	Th'd	½ - 1½	Scr'd	Integral	No	A105	316SS	316SS	Grafoil	
NE-3601	-29 / 378	6000	Th'd	½ - 1½	Scr'd	Integral	No	A105	316SS	316SS	Grafoil	
NE-3602	-29 / 250	6000	Th'd	½ - 1½	Scr'd	Integral	Yes	316SS	316SS	316SS	Grafoil	
NE-3603	-45 / 250	6000	Th'd	½ - 1½	Scr'd	Integral	Yes	316SS	316SS	316SS	Grafoil	

#### Butterfly Valve Technical Requirements

Tag #	Temp Rtg °C	ANSI Class	Ends	Size (NPS)	Fire Safe	NACE	Body Mat'l	Disc Mat'l	Shaft Mat'l	Stem Packing	Seat Mat'l	Bolting Mat'l
BU-1012	-29 / 250	150	Wafer /	2 - 12	No	Yes	DCI	316SS	316SS	Graphoil	Filled TFE	B7M



JAPAN CANADA OIL SANDS LIMITED

**SPECIFICATIONS**

**VALVE SPECIFICATIONS**

**J5053**

**Butterfly Valve Technical Requirements**

Tag #	Temp Rtg °C	ANSI Class	Ends	Size (NPS)	Fire Safe	NACE	Body Mat'l	Disc Mat'l	Shaft Mat'l	Stem Packing	Seat Mat'l	Bolting Mat'l
			Lug									
BU-1013S	-45 / 148	150	Wafer / Lug	2 - 12	Yes	Yes	A351 CF8M	316SS	316SS	Graphoil	Filled TFE	B8M
BU-1017	-29 / 250	150	Wafer / Lug	10	No	No	DCI	316SS	316SS	Graphoil	Filled TFE	B7

**Lined Plug Valve Technical Requirements**

Tag #	Temp Rtg °C	Pressure Rating over Temp. Range	ANSI Class	Ends	Size (NPS)	Port	Top Cover	Top Cover Material	Plug	Plug Material	Body Material	Sleeve
P-1017	-29 / 250	700 kPag	150	RF Flg	1 - 6	Regular	Bolted	Ductile Iron	Tapered	Ductile Iron, PFA or PTFE Lined	Ductile Iron, PFA or PTFE Lined	Integral Part of PFA or PTFE Liner

**Diaphragm Valve Technical Requirements**

Tag #	Temp Rtg °C	ANSI Class	Ends	Size (NPS)	Bonnet	Bonnet Material	Body	Body Material	Diaphragm	NACE	
D-1012	-29 / 250	150	RF Flg	2 - 6	Bolted	A216 WCB or Ductile Iron	Weir or straight through	ASTM A216 WCB or Ductile Iron	Elastomer backed	Yes	
D-1017	-29 / 250	150	RF Flg	1 - 6	Bolted	A216 WCB or Ductile Iron	Weir or straight through	ASTM A216 WCB or Ductile Iron with FEP, PFA, PTFE or ETFE liner	Elastomer backed, PTFE lined	No	

## Maria Steele

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**From:** Brett Hiebert  
**Sent:** June 9, 2020 10:43 AM  
**To:** 'Kluck, John'  
**Cc:** Reed, Kyle; Kyle Scott  
**Subject:** RE: [EXTERNAL] PVF Quote - Greenfire O&G  
**Attachments:** Dnow Return.pdf  
  
**Importance:** High

Good Morning John,

Due to unforeseen circumstances with the Greenfire project, Boom would like to return the items highlighted on the attached quotation. Please let me know if this is possible and if any restocking fees apply.

### Brett Hiebert

Project Manager

Office: 403-946-0066

Email: [Bhiebert@boomltd.ca](mailto:Bhiebert@boomltd.ca) | [www.boomltd.ca](http://www.boomltd.ca)

**From:** Kluck, John <[John.Kluck@dnow.com](mailto:John.Kluck@dnow.com)>  
**Sent:** February 25, 2020 2:57 PM  
**To:** Brett Hiebert <[BHiebert@boomltd.ca](mailto:BHiebert@boomltd.ca)>; Ryan Morse <[RMorse@boomltd.ca](mailto:RMorse@boomltd.ca)>  
**Cc:** Reed, Kyle <[Kyle.Reed@dnow.com](mailto:Kyle.Reed@dnow.com)>  
**Subject:** RE: [EXTERNAL] PVF Quote - Greenfire O&G

Please see the revised quotation with DHV.

Thanks,

### John Kluck

Inside Sales Representative

**DistributionNOW**

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Calgary, AB T2C 1X8

**Phone:** 1-403-508-6800

**FAX:** 1-403-508-6848

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**From:** Brett Hiebert <[BHiebert@boomltd.ca](mailto:BHiebert@boomltd.ca)>  
**Sent:** Tuesday, February 25, 2020 2:11 PM  
**To:** Kluck, John <[John.Kluck@dnow.com](mailto:John.Kluck@dnow.com)>; Ryan Morse <[RMorse@boomltd.ca](mailto:RMorse@boomltd.ca)>  
**Cc:** Reed, Kyle <[Kyle.Reed@dnow.com](mailto:Kyle.Reed@dnow.com)>  
**Subject:** RE: [EXTERNAL] PVF Quote - Greenfire O&G

Thanks John,

Pricing looks good. As discussed please stick to the DHV valves and no YDF or Newco, other accepted vendors include;  
Velan, KITZ, Fortune

**Brett Hiebert**

Project Manager

Office: 403-946-0066

Email: [Bhiebert@boomltd.ca](mailto:Bhiebert@boomltd.ca) | [www.boomltd.ca](http://www.boomltd.ca)

**From:** Kluck, John <[John.Kluck@dnw.com](mailto:John.Kluck@dnw.com)>

**Sent:** February 25, 2020 11:52 AM

**To:** Brett Hiebert <[BHiebert@boomltd.ca](mailto:BHiebert@boomltd.ca)>; Ryan Morse <[RMorse@boomltd.ca](mailto:RMorse@boomltd.ca)>

**Cc:** Reed, Kyle <[Kyle.Reed@dnw.com](mailto:Kyle.Reed@dnw.com)>

**Subject:** RE: [EXTERNAL] PVF Quote - Greenfire O&G

Good morning guys,

Please see the attached quotation.

I consolidated items on the quote that were identical and offered best priced valves where possible. Item 390/400 is a mixture of DHV and YDF as a total of four are required and I only have three YDF. If DHV was more attractively priced I offered it.

Thanks for the opportunity.

**John Kluck**

Inside Sales Representative

**DistributionNOW**

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**From:** Brett Hiebert <[BHiebert@boomltd.ca](mailto:BHiebert@boomltd.ca)>

**Sent:** Tuesday, February 25, 2020 8:50 AM

**To:** Kluck, John <[John.Kluck@dnw.com](mailto:John.Kluck@dnw.com)>; Ryan Morse <[RMorse@boomltd.ca](mailto:RMorse@boomltd.ca)>

**Cc:** Reed, Kyle <[Kyle.Reed@dnw.com](mailto:Kyle.Reed@dnw.com)>

**Subject:** RE: [EXTERNAL] PVF Quote - Greenfire O&G

John,

Please see revised BOM, not sure what happened in the spreadsheet, but I have resent it and it should make more sense now.

All quantities of pipe are in feet

Checking on valve type with client, please quote the YDF for now and Newco for small bore

Don't worry about the pipe shoes/anchors/guides for now.

**Brett Hiebert**

Project Manager

Office: 403-946-0066

Email: [Bhiebert@boomltd.ca](mailto:Bhiebert@boomltd.ca) | [www.boomltd.ca](http://www.boomltd.ca)

**From:** Kluck, John <[John.Kluck@dnw.com](mailto:John.Kluck@dnw.com)>

**Sent:** February 25, 2020 8:34 AM

**To:** Ryan Morse <[RMorse@boomltd.ca](mailto:RMorse@boomltd.ca)>; Brett Hiebert <[BHiebert@boomltd.ca](mailto:BHiebert@boomltd.ca)>

**Cc:** Reed, Kyle <[Kyle.Reed@dnw.com](mailto:Kyle.Reed@dnw.com)>

**Subject:** RE: [EXTERNAL] PVF Quote - Greenfire O&G

Hi Brett,

Please verify Item 65, 76 and 92 Stud bolt quantity as well.

Thanks,

**John Kluck**

Inside Sales Representative

**DistributionNOW**

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**FAX:** 1-403-508-6848

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**From:** Ryan Morse <[RMorse@boomltd.ca](mailto:RMorse@boomltd.ca)>

**Sent:** Tuesday, February 25, 2020 8:13 AM

**To:** Brett Hiebert <[BHiebert@boomltd.ca](mailto:BHiebert@boomltd.ca)>

**Cc:** Kluck, John <[John.Kluck@dnw.com](mailto:John.Kluck@dnw.com)>; Reed, Kyle <[Kyle.Reed@dnw.com](mailto:Kyle.Reed@dnw.com)>

**Subject:** FW: [EXTERNAL] PVF Quote - Greenfire O&G

**Importance:** High

Hi Brett,

Can you provide a response for John and Kyle from the questions below.

- Also, item #39 is looking for 1 Stud c/w nut, please advise actual quantity.
- One other question is regarding the pipe. When you are asking for 5, does that mean 5 feet or 5 lengths of 20'?
- Do you want us to still quote the material that say "NOT by BOOM"
- For items that say see details, do you have the drawings? (pipe shoes, anchors, etc.)
- Will YDF valves be accepted instead of DHV where possible and Newco for the small bore valves?

Thanks,

Ryan





**Ryan Morse**

Vice President

Office: 587-355-4165 Cell: 403-992-6909

Email: [rmorse@boomltd.ca](mailto:rmorse@boomltd.ca) [www.boomltd.ca](http://www.boomltd.ca)

Suite 700 – 308, 4<sup>th</sup> Ave SW

Calgary, Alberta T2P 0H7

**From:** Kluck, John <[John.Kluck@dnw.com](mailto:John.Kluck@dnw.com)>

**Sent:** February 25, 2020 8:04 AM

**To:** Reed, Kyle <[Kyle.Reed@dnw.com](mailto:Kyle.Reed@dnw.com)>; Ryan Morse <[RMorse@boomltd.ca](mailto:RMorse@boomltd.ca)>

**Subject:** RE: [EXTERNAL] PVF Quote - Greenfire O&G

One other question is regarding the pipe. When you are asking for 5, does that mean 5 feet or 5 lengths of 20'?

**John Kluck**

Inside Sales Representative

**DistributionNOW**

5920 30<sup>th</sup> ST. SE

Calgary, AB T2C 1X8

**Phone:** 1-403-508-6800

**FAX:** 1-403-508-6848

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**From:** Reed, Kyle

**Sent:** Tuesday, February 25, 2020 7:54 AM

**To:** Ryan Morse <[RMorse@boomltd.ca](mailto:RMorse@boomltd.ca)>

**Cc:** Kluck, John <[John.Kluck@dnw.com](mailto:John.Kluck@dnw.com)>

**Subject:** RE: [EXTERNAL] PVF Quote - Greenfire O&G

Hey Ryan,

Please see clarifications below:

1. Do you want us to still quote the material that say "NOT by BOOM"
2. For items that say see details, do you have the drawings? (pipe shoes, anchors, etc.)
3. Will YDF valves be accepted instead of DHV where possible and Newco for the small bore valves?

Thanks,

**Kyle Reed**

*Corporate Account Executive*

**DistributionNOW**

#845 – 401 9<sup>th</sup> ave SW

Calgary, Alberta, T2P 3C5

Direct: 403-531-5605

Mobile: 403-710-0188

Email: Kyle.Reed@dnw.com

distributionnow.com

**Our Customers are Priority One**

**From:** Ryan Morse <RMorse@boomltd.ca>

**Sent:** Monday, February 24, 2020 5:25 PM

**To:** Reed, Kyle <Kyle.Reed@dnw.com>

**Subject:** [EXTERNAL] PVF Quote - Greenfire O&G

**Importance:** High

Hi Kyle,

We have been awarded this project and are wondering if you'd be able to put together a rush quote for supply. Ideally we would be looking to pick up the material this Thursday. If it's too tight a timeline please let me know.

Thanks,

Ryan



**Ryan Morse**

Vice President

Office: 587-355-4165 Cell: 403-992-6909

Email: rmorse@boomltd.ca www.boomltd.ca

Suite 700 – 308, 4<sup>th</sup> Ave SW

Calgary, Alberta T2P 0H7

Item	Material	Description	Qty	UM	Unit Price	Disc%
300	5561	STUD 3/4 IN X 4-3/4 IN \ 4-1/2 IN FTF B7 BLACK ALLOY STEEL STUD ONLY ASTM A193 10 TPI UNC First Delivery Date: 02/25/2020	8	EA	3.14 /EA	63.06%
310	71771	NUT HEX 3/4 IN GRADE 2H CARBON STEEL BLACK A194 First Delivery Date: 02/25/2020	16	EA	0.56 /EA	35.71%
320	4517	STUD 3/4 IN X 5 IN \ 4-3/4 IN FTF B7 BLACK ALLOY STEEL STUD ONLY ASTM A193 10 TPI UNC First Delivery Date: 02/25/2020	516	EA	3.36 /EA	63.10%
330	71771	NUT HEX 3/4 IN GRADE 2H CARBON STEEL BLACK A194 First Delivery Date: 02/25/2020	1,032	EA	0.56 /EA	35.71%
340	4413	TEE I 3/4 IN CLASS 6000 THREADED A105N BLACK FORGED CARBON STEEL First Delivery Date: 02/25/2020	1	EA	43.97 /EA	80.15%
350	725561	FLANGE WELDNECK I 4 IN XS CLASS 300 RAISED FACE A/SA105N CARBON STEEL ASME B16.5 BLACK First Delivery Date: 02/25/2020	1	EA	85.16 /EA	43.68%
360	724680	GASKET SPIRAL WOUND CG/WR 4 IN CLASS 300 316L STAINLESS STEEL WINDING FLEXIBLE GRAPHITE FILLER CARBON STEEL OUTER RING First Delivery Date: 02/25/2020	2	EA	7.71 /EA	56.55%
370	5376	STUD 5/8 IN X 3-3/4 IN \ 3-1/2 IN FTF B7 BLACK ALLOY STEEL STUD ONLY ASTM A193 11 TPI UNC First Delivery Date: 02/25/2020	52	EA	2.04 /EA	63.24%
380	5349	NUT HEX 5/8 IN GRADE 2H CARBON STEEL BLACK A194 First Delivery Date: 02/25/2020	104	EA	0.41 /EA	34.15%
400	1159116	VLV GT 6 IN RF 300 RP BB OS&Y BD WCB / DHV First Delivery Date: 02/25/2020	4	EA	2,787.80 /EA	49.74%
410	ZNIPV10	VLV GLB 6 IN RF 300 DHV C220F3 TRIM 8 First Delivery Date: 02/25/2020	1	EA	0.00	
421	ZNIPV10	VLV CK SWG 6 IN 300 DHV C320F3 RP TRIM 8 First Delivery Date: 02/25/2020	1	EA	0.00	
430	727365	ELBOW I 6 IN 90 DEGREE LONG RADIUS XS BUTTWELD SEAMLESS WPB A/SA234 ASME B16.9 CARBON STEEL First Delivery Date: 02/25/2020	33	EA	1,098.93 /EA	91.77%

Questions: [DNOW Canada ULC CALGARY AB Phone: 403-508-6800](mailto:DNOW Canada ULC CALGARY AB Phone: 403-508-6800)

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Item	Material	Description	Qty	UM	Unit Price	Dis
440	727271	ELBOW I 6 IN 90 DEGREE LONG RADIUS STD BUTTWELD SEAMLESS WPB A/SA234 ASME B16.9 CARBON STEEL First Delivery Date: 02/25/2020	3	EA	652.00 /EA	91.77
450	725567	FLANGE WELDNECK I 6 IN STD CLASS 150 RAISED FACE A/SA105N CARBON STEEL ASME B16.5 BLACK First Delivery Date: 02/25/2020	2	EA	82.17 /EA	43.69
460	725570	FLANGE WELDNECK I 6 IN XS CLASS 300 RAISED FACE A/SA105N CARBON STEEL ASME B16.5 BLACK First Delivery Date: 02/25/2020	59	EA	133.07 /EA	43.68
480	379336	GASKET SPIRAL WOUND CG/WR 6 IN CLASS 150 316L STAINLESS STEEL WINDING FLEXIBLE GRAPHITE FILLER CARBON STEEL OUTER RING First Delivery Date: 02/25/2020	4	EA	10.63 /EA	56.54
490	838206	GASKET SPIRAL WOUND CG/WR 6 IN CLASS 300 316L STAINLESS STEEL WINDING FLEXIBLE GRAPHITE FILLER CARBON STEEL OUTER RING ASME B16.20 First Delivery Date: 02/25/2020	81	EA	12.26 /EA	56.53
500	747228	PIPE G 6 150 MM .432 IN 10.97 MM S80 XS SEAMLESS SA106 B CSA 290 CATEGORY I SINGLE RANDOM LENGTH LACQUER BEVELED ENDS 6.625 IN 168.3 MM OD 28.60 LB/FT 42.56 KG/M CARBON STEEL First Delivery Date: 02/25/2020	900.000	FT	55.84 /FT	42.78
510	747205	PIPE G 6 150 MM .280 IN 7.11 MM S40 STD SEAMLESS SA106 B CSA 290 CATEGORY I SINGLE RANDOM LENGTH LACQUER BEVELED ENDS 6.625 IN 168.3 MM OD 18.99 LB/FT 28.26 KG/M CARBON STEEL First Delivery Date: 02/25/2020	80.000	FT	37.60 /FT	42.77
520	ZNIPF30	SOL U 1-1/2 IN X 5-36 IN 3M A105 First Delivery Date: 02/25/2020	1	EA	0.00	
530	32717	SOCKOLET U 3/4 IN X 3 IN - 10 IN CLASS 6000 A105N BLACK FORGED CARBON STEEL First Delivery Date: 02/25/2020	1	EA	34.38 /EA	61.37
540	463097	SOCKOLET U 1 IN X 3 IN - 36 IN CLASS 3000 A105N BLACK FORGED CARBON STEEL <u>Special Instructions:</u> **4-5 RUN SIZE** First Delivery Date: 02/25/2020	5	EA	21.37 /EA	61.39
550	1049930	WELDOLET U 2 IN X 6 IN XS A105N CARBON STEEL First Delivery Date: 02/25/2020	3	EA	47.68 /EA	61.39

Questions: [DNOW Canada ULC](mailto:DNOW Canada ULC) CALGARY AB Phone: 403-508-6800

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CROSSFIELD AB T0M 0S0

Item	Material	Description	Qty	UM	Unit Price	Dis
11	1159193	VLV GT 1-1/2 IN THD 800 RP BB BD A105N / DHV <u>Special Instructions:</u> **MACHINE ONE END TO SW** **1 DAY ARO** First Delivery Date: 02/25/2020	1	EA	393.72 /EA	57.3
20	718940	NIPPLE PIPE 1-1/2 IN X 4 IN PLAIN BOTH ENDS SEAMLESS S160 CARBON STEEL A106B BLACK First Delivery Date: 02/25/2020	1	EA	143.60 /EA	91.9
30	751001	PLUG HEX I 1-1/2 IN CLASS 6000 THREADED A/SA105N ASME B16.11 BLACK FORGED CARBON STEEL First Delivery Date: 02/25/2020	1	EA	17.39 /EA	80.1
41	206054	VLV GT 1 IN THD 800 RP BB A105N CS / DHV <u>Special Instructions:</u> **MODIFY ONE END TO SW** ** 1 DAY ARO** First Delivery Date: 02/25/2020	5	EA	151.96 /EA	25.5
50	114691	NIPPLE 1 IN X 4 IN PLAIN BOTH ENDS SEAMLESS S160 CARBON STEEL ASTM A106B First Delivery Date: 02/25/2020	1	EA	86.40 /EA	91.9
60	30348	NIPPLE 1 IN X 3 IN PLAIN BOTH ENDS SEAMLESS S160 A106 BLACK CARBON STEEL First Delivery Date: 02/25/2020	2	EA	75.60 /EA	91.9
70	114691	NIPPLE 1 IN X 4 IN PLAIN BOTH ENDS SEAMLESS S160 CARBON STEEL ASTM A106B First Delivery Date: 02/25/2020	1	EA	86.40 /EA	91.9
80	1091041	PIPE I 1 25 MM .250 IN 6.35 MM S160 SEAMLESS A/SA106 B CSA 290 CATEGORY I SINGLE RANDOM LENGTH PLAIN ENDS 1.315 IN 33.4 MM OD 2.85 LB/FT 4.24 KG/M CARBON STEEL First Delivery Date: 02/25/2020	20.000	FT	9.14 /FT	45.8

Questions: DNOW Canada ULC CALGARY AB Phone: 403-508-6800

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Item	Material	Description	Qty	UM	Unit Price	Disc%
560	727306	REDUCER CONCENTRIC I 6 IN X 3 IN STD BUTTWELD SEAMLESS WPB A/SA234 ASME B16.9 CARBON STEEL First Delivery Date: 02/25/2020	1	EA	304.90 /EA	91.77%
570	727390	TEE REDUCING I 6 IN X 3 IN XS BUTTWELD SEAMLESS WPB A/SA234 ASME B16.9 CARBON STEEL First Delivery Date: 02/25/2020	1	EA	1,171.98 /EA	91.77%
580	12760	SOCKOLET U 3/4 IN X 1-1/2 IN - 36 IN CLASS 3000 A105N BLACK FORGED CARBON STEEL First Delivery Date: 02/25/2020	1	EA	18.88 /EA	61.39%
590	32717	SOCKOLET U 3/4 IN X 3 IN - 10 IN CLASS 6000 A105N BLACK FORGED CARBON STEEL First Delivery Date: 02/25/2020	5	EA	34.38 /EA	61.37%
600	727265	REDUCER CONCENTRIC I 6 IN X 4 IN XS BUTTWELD SEAMLESS WPB A/SA234 ASME B16.9 CARBON STEEL First Delivery Date: 02/25/2020	1	EA	334.96 /EA	91.77%
610	727325	TEE I 6 IN XS BUTTWELD SEAMLESS WPB A/SA234 ASME B16.9 CARBON STEEL First Delivery Date: 02/25/2020	1	EA	1,108.76 /EA	91.77%
620	727296	TEE I 6 IN STD BUTTWELD SEAMLESS WPB A/SA234 ASME B16.9 CARBON STEEL First Delivery Date: 02/25/2020	1	EA	728.12 /EA	91.77%
630	725578	FLANGE WELDNECK I 8 IN XS CLASS 300 RAISED FACE A/SA105N CARBON STEEL ASME B16.5 BLACK First Delivery Date: 02/25/2020	1	EA	225.28 /EA	43.68%
640	724704	GASKET SPIRAL WOUND CG/WR 8 IN CLASS 300 316L STAINLESS STEEL WINDING FLEXIBLE GRAPHITE FILLER CARBON STEEL OUTER RING First Delivery Date: 02/25/2020	2	EA	17.14 /EA	56.53%
650	727330	REDUCER CONCENTRIC I 8 IN X 6 IN XS BUTTWELD SEAMLESS WPB A/SA234 ASME B16.9 CARBON STEEL First Delivery Date: 02/25/2020	1	EA	543.30 /EA	91.77%
660	7385	STUD 7/8 IN X 5-3/4 IN \ 5-1/2 IN FTF B7 BLACK ALLOY STEEL STUD ONLY ASTM A193 9 TPI UNC	12	EA	5.13 /EA	63.16%

Questions: [DNOW Canada ULC](mailto:DNOW Canada ULC) CALGARY AB Phone: 403-508-6800

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Item	Material	Description	Qty	UM	Unit Price	Dis
90	1016250	PLUG HEX I 1 IN THREADED A105N FORGED CARBON STEEL First Delivery Date: 02/25/2020	5	EA	10.02 /EA	80.3
101	ZNIPV10	VLV GT 2 IN RF 300 DHV C120F3 TRIM 8 First Delivery Date: 02/25/2020	1	EA	0.00	
111	1159134	VLV GLB 2 IN RF 300 RP BB OS&Y BD WCB / DHV C220F3 First Delivery Date: 02/25/2020	1	EA	844.97 /EA	47.8
120	727364	ELBOW I 2 IN 90 DEGREE LONG RADIUS XS BUTTWELD SEAMLESS WPB A/SA234 ASME B16.9 CARBON STEEL First Delivery Date: 02/25/2020	2	EA	68.80 /EA	91.7
130	725540	FLANGE WELDNECK I 2 IN XS CLASS 300 RAISED FACE A/SA105N CARBON STEEL ASME B16.5 BLACK First Delivery Date: 02/25/2020	6	EA	27.25 /EA	43.6
140	838205	GASKET SPIRAL WOUND CG/WR 2 IN CLASS 300-600 316L STAINLESS STEEL WINDING FLEXIBLE GRAPHITE FILLER CARBON STEEL OUTER RING ASME B16.20 First Delivery Date: 02/25/2020	16	EA	3.60 /EA	56.3
150	746882	PIPE G 2 50 MM .218 IN 5.54 MM S80 XS SEAMLESS SA106 B CSA 290 CATEGORY I SINGLE RANDOM LENGTH LACQUER BEVELED ENDS 2.375 IN 60.3 MM OD 5.03 LB/FT 7.48 KG/M CARBON STEEL First Delivery Date: 02/25/2020	20.000	FT	10.36 /FT	46.72
160	816627	ELBOW I 3 IN 90 DEGREE LONG RADIUS XS BUTTWELD SEAMLESS WPB A/SA234 ASME B16.9 CARBON STEEL First Delivery Date: 02/25/2020	1	EA	185.21 /EA	91.7
170	725547	FLANGE WELDNECK I 3 IN STD CLASS 150 RAISED FACE A/SA105N CARBON STEEL ASME B16.5 BLACK First Delivery Date: 02/25/2020	1	EA	38.19 /EA	43.68
180	549074	GASKET SPIRAL WOUND CG/WR 3 IN CLASS 150 316L STAINLESS STEEL WINDING FLEXIBLE GRAPHITE FILLER CARBON STEEL OUTER RING First Delivery Date: 02/25/2020	2	EA	5.37 /EA	56.6
190	747025	PIPE G 3 80 MM .300 IN 7.62 MM S80 XS SEAMLESS SA106 B CSA 290	20.000	FT	20.70 /FT	45.31

Questions: [DNOW Canada ULC CALGARY AB Phone: 403-508-6800](mailto:DNOW Canada ULC CALGARY AB Phone: 403-508-6800)

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Item	Material	Description	Qty	UM	Unit Price	Disc
		CATEGORY				
		I SINGLE RANDOM LENGTH LACQUER BEVELED ENDS 3.5 IN 88.9 MM OD 10.26				
		LB/FT 15.27 KG/M CARBON STEEL				
		First Delivery Date: 02/25/2020				
200	727328	REDUCER CONCENTRIC I 3 IN X 2 IN XS BUTTWELD SEAMLESS WPB A/SA234	1	EA	89.04 /EA	91.77
		ASME				
		B16.9 CARBON STEEL				
		First Delivery Date: 02/25/2020				
211	1159182	VLV GT 3/4 IN SW X THD 800 RP BB A105N / DHV F1800ST33	7	EA	193.83 /EA	47.17
		First Delivery Date: 02/25/2020				
220	6169	ELBOW I 3/4 IN 90 DEGREE CLASS 3000 SOCKET WELD A105N BLACK FORGED	1	EA	15.32 /EA	80.16
		CARBON STEEL				
		First Delivery Date: 02/25/2020				
230	30631	NIPPLE 3/4 IN X 4 IN PLAIN BOTH ENDS SEAMLESS XS A106 BLACK CARBON	1	EA	29.00 /EA	91.97
		STEEL				
		First Delivery Date: 02/25/2020				
240	718958	NIPPLE PIPE 3/4 IN X 4 IN PLAIN BOTH ENDS SEAMLESS XXS CARBON STEEL	1	EA	63.40 /EA	91.97
		A106B BLACK				
		First Delivery Date: 02/25/2020				
250	1080181	NIPPLE 3/4 IN X 3 IN XXS SEAMLESS BLACK PBE ASTM A106B	5	EA	188.61 /EA	96.82
		First Delivery Date: 02/25/2020				
260	7735	NIPPLE U 3/4 IN X 3 IN THREADED BOTH ENDS SEAMLESS XXS A106 BLACK	2	EA	58.60 /EA	89.78
		CARBON				
		STEEL				
		First Delivery Date: 02/25/2020				
270	750998	PLUG HEX I 3/4 IN CLASS 6000 THREADED A/SA105N ASME B16.11 BLACK	5	EA	7.04 /EA	80.11
		FORGED				
		CARBON STEEL				
		First Delivery Date: 02/25/2020				
280	5560	STUD 3/4 IN X 4-1/4 IN \ 4 IN FTF B7 BLACK ALLOY STEEL STUD ONLY ASTM	16	EA	2.83 /EA	62.90
		A193 10 TPI UNC				
		First Delivery Date: 02/25/2020				
290	71771	NUT HEX 3/4 IN GRADE 2H CARBON STEEL BLACK A194	32	EA	0.56 /EA	35.71
		First Delivery Date: 02/25/2020				

Questions: [DNOW Canada ULC CALGARY AB Phone: 403-508-6800](mailto:DNOW Canada ULC CALGARY AB Phone: 403-508-6800)

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Item	Material Description	Qty	UM	Unit Price	Dis
	First Delivery Date: 02/25/2020				
670	5350 NUT HEX 7/8 IN GRADE 2H CARBON STEEL BLACK A194	24	EA	0.85 /EA	35.2
	First Delivery Date: 02/25/2020				

Item Total.....  
Subtotal for Taxes.....  
Quotation Amount.....

Pricing Includes  
GST TAX 2,571.20

Subject to terms on back Payment Terms:Net 30 Days Delivery Terms:FOB Freight on Board Currency:CAD

GST Registration# R121684302

Questions: DNOW Canada ULC CALGARY AB Phone: 403-508-6800

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## Maria Steele

---

**From:** Brett Hiebert  
**Sent:** June 9, 2020 11:00 AM  
**To:** Charlene Marfleet; Donald Smith  
**Cc:** Kyle Scott  
**Subject:** Material Return Shoes Greenfire  
**Attachments:** Outkast Shoes.pdf

Good Morning Charlene,

As per our discussion, we will be returning the material listed on this quote this afternoon. Please let me know what the shipping charge and refund will be.

Regards,



**Brett Hiebert**

Project Manager

Office: 403-946-0066

Cell: 403-619-7111

Email: [Bhiebert@boomltd.ca](mailto:Bhiebert@boomltd.ca) | [www.boomltd.ca](http://www.boomltd.ca)

Box 1379, 42A McCool Crescent

Crossfield Alberta T0M 0S0



## INVOICE

Invoice No.: 104732  
 Date: 03/12/2020  
 Ship Date:  
 Page: 1  
 Re: Order No. 2237

Box 636  
 Sundre, Alberta T0M 1X0

Ph: 403-638-3941  
 Fax: 403-638-3944

Sold to:

e-mail: outkast@telus.net

Ship to:

Boom Construction  
 PO Box 1379  
 Crossfield, Alberta T0M 0S0

Boom Construction  
 PO Box 1379  
 Crossfield, Alberta T0M 0S0  
 ANDREW SILBERER  
 MRR#4

Business No.: 132364464RP0001

Quantity	Unit	Description	Tax	Base Price	Disc %	Unit Price	Amount
57	Each	6" Pipe Shoe	G	59.35	15.00	50.45	2,875.65
		Subtotal:					2,875.65
		G - GST 5%					143.78
		GST					
Outkast Oilfield Supplies Inc. GST: #R132364464							
Shipped By: Tracking Number:						Total Amount	3,019.43
Comment: Terms: Net 30 Days						Amount Paid	0.00
Sold By:						Amount Owing	3,019.43

## Maria Steele

---

**From:** Alfredo Aburto <alfredo.aburto@deluma.com>  
**Sent:** March 11, 2020 10:45 AM  
**To:** Travis Shield; Andrew Silberer; Dave Tainsh  
**Cc:** Toni Hudson; Brett Hiebert; Ashley Smith; somerstroy@gmail.com  
**Subject:** RE: RFI 009 BOOM-CM-RFI-009 GF MOC 100

No concerns

**Alfredo Aburto Gonzalez, P. Eng.**

**Deluma Engineering Inc.**

Tel: +1 403 290 0336, Ext 104 | Mob: +1 403 542 1960

Suite 321 | 5940 Macleod Trail SW | Calgary, AB T2H 2G4 | Canada

[www.Deluma.com](http://www.Deluma.com)

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**From:** Travis Shield <[tshield@greenfireoilandgas.com](mailto:tshield@greenfireoilandgas.com)>

**Sent:** March 11, 2020 8:27 AM

**To:** Andrew Silberer <[ASilberer@boomltd.ca](mailto:ASilberer@boomltd.ca)>; Dave Tainsh (<[Dave.Tainsh@djaes.com](mailto:Dave.Tainsh@djaes.com)> <[Dave.Tainsh@djaes.com](mailto:Dave.Tainsh@djaes.com)>);

Alfredo Aburto <[alfredo.aburto@deluma.com](mailto:alfredo.aburto@deluma.com)>

**Cc:** Toni Hudson <[THudson@boomltd.ca](mailto:THudson@boomltd.ca)>; Brett Hiebert <[BHiebert@boomltd.ca](mailto:BHiebert@boomltd.ca)>; Ashley Smith <[asmith@boomltd.ca](mailto:asmith@boomltd.ca)>;  
[somerstroy@gmail.com](mailto:somerstroy@gmail.com)

**Subject:** RE: RFI 009 BOOM-CM-RFI-009 GF MOC 100

Hi Andrew,

I approve of adding a break flange to enable transportation. Can you please specify and further mark up the drawing to show the desired dimension/location of the break flange?

Alfredo, let me know if you have any concerns.

Thanks,

Travis Shield, P.Eng.

**Facilities Engineer**

**Greenfire Oil and Gas Ltd.**

587.834.8354 (cell)

587.315.5655 (office)

[tshield@greenfireoilandgas.com](mailto:tshield@greenfireoilandgas.com)



**GREENFIRE**  
OIL AND GAS LTD.

**From:** Andrew Silberer <[ASilberer@boomltd.ca](mailto:ASilberer@boomltd.ca)>

**Sent:** March 11, 2020 7:59 AM

**To:** Travis Shield <[tshield@greenfireoilandgas.com](mailto:tshield@greenfireoilandgas.com)>

**Cc:** Toni Hudson <[THudson@boomltd.ca](mailto:THudson@boomltd.ca)>; Brett Hiebert <[BHiebert@boomltd.ca](mailto:BHiebert@boomltd.ca)>; Ashley Smith <[asmith@boomltd.ca](mailto:asmith@boomltd.ca)>;  
[somerstroy@gmail.com](mailto:somerstroy@gmail.com)

**Subject:** RFI 009 BOOM-CM-RFI-009 GF MOC 100

Hi Travis

Please see RFI for your review and response.

Thanks Andrew



**Andrew J. Silberer, P.Eng.**

Office: 403-946-0066 | Cell: 403-586-4549

Email: [asilberer@boomltd.ca](mailto:asilberer@boomltd.ca) | [www.boomltd.ca](http://www.boomltd.ca)

Box 1379, 42A McCool Crescent

Crossfield Alberta T0M 0S0

## Maria Steele

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**From:** Andrew Silberer  
**Sent:** March 11, 2020 12:51 PM  
**To:** Travis Shield; Alfredo Aburto  
**Cc:** Brett Hiebert; Ashley Smith; Toni Hudson; somerstroy@gmail.com  
**Subject:** RE: RFI 10 BOOM-CM-RFI-010 GF MOC-100  
**Attachments:** RFI 10 ref ISO.pdf

Hi Travis

Please see attached, dim is 355mm

Thanks Andrew

**From:** Travis Shield <tshield@greenfireoilandgas.com>  
**Sent:** March 11, 2020 12:27 PM  
**To:** Andrew Silberer <ASilberer@boomltd.ca>; Alfredo Aburto <alfredo.aburto@deluma.com>  
**Cc:** Brett Hiebert <BHiebert@boomltd.ca>; Ashley Smith <asmith@boomltd.ca>; Toni Hudson <THudson@boomltd.ca>; somerstroy@gmail.com  
**Subject:** RE: RFI 10 BOOM-CM-RFI-010 GF MOC-100

Hi Andrew,

Please show dimension.

Thanks,

Travis Shield, P.Eng.  
Facilities Engineer  
Greenfire Oil and Gas Ltd.  
587.834.8354 (cell)  
587.315.5655 (office)  
[tshield@greenfireoilandgas.com](mailto:tshield@greenfireoilandgas.com)



**GREENFIRE**  
OIL AND GAS LTD.

**From:** Andrew Silberer <ASilberer@boomltd.ca>  
**Sent:** March 11, 2020 11:06 AM  
**To:** Travis Shield <tshield@greenfireoilandgas.com>; Alfredo Aburto <alfredo.aburto@deluma.com>  
**Cc:** Brett Hiebert <BHiebert@boomltd.ca>; Ashley Smith <asmith@boomltd.ca>; Toni Hudson <THudson@boomltd.ca>; somerstroy@gmail.com  
**Subject:** RFI 10 BOOM-CM-RFI-010 GF MOC-100

Hi Travis

Please see attached RFI for your review and response.



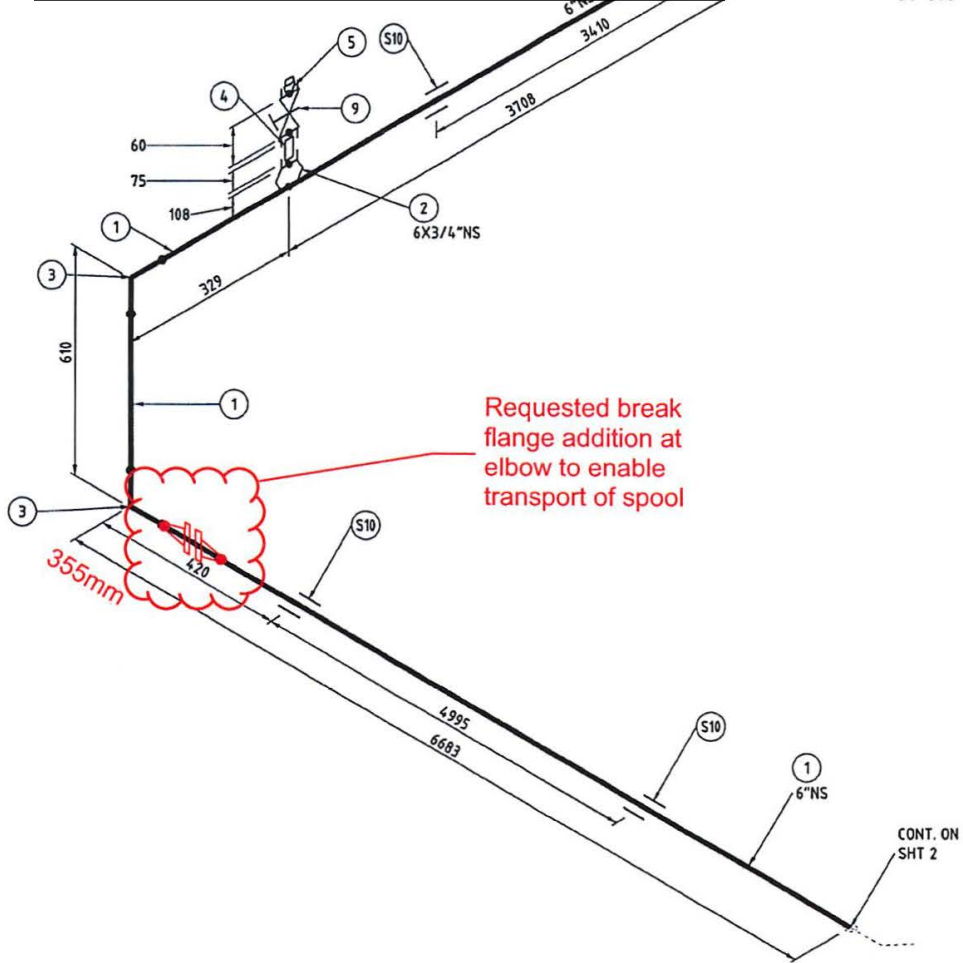
Thanks Andrew



**Andrew J. Silberer, P.Eng.**

Office: 403-946-0066 | Cell: 403-586-4549  
Email: [asilberer@boomltd.ca](mailto:asilberer@boomltd.ca) | [www.boomltd.ca](http://www.boomltd.ca)  
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325



**FIELD FABRICATION  
ISOMETRIC**

REV.	REVISION	BY	APP	DATE
2	REVISED TO MATCH RELOCATED BLDG			28 FEB 2020
1	ADDED PIPE SHOE			24 FEB 2020
0	ISSUED FOR PIPING FABRICATION			23 FEB 2020

NOTES  
- FIELD CHECK ALL DIMENSIONS  
PRIOR TO FABRICATION

PIPING SPEC.	BS
DESIGN / OPERATING PRESSURE	4100 KPa / 2200 KPa
TEST PRESSURE	7650 KPa
DESIGN TEMPERATURE	-29 / 250 °C
OPERATING TEMPERATURE	206 °C
RADIOGRAPHY	100%
PWHT	PER LDT
DESIGN CODE	ANSI B31.3

PROJECT	HANGINGSTONE SAGD
DESCRIPTION	PHASE 3 PUMP ADDITION
PROJECT No.	033755
CHECKED	
APPROVED	

PHASE 3

P-186

## Maria Steele

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**From:** Andrew Silberer  
**Sent:** March 11, 2020 10:49 AM  
**To:** Brett Hiebert; Curtis Ellithorpe  
**Subject:** RE: Boom Crew - on-site MOC 100

Sounds great, thanks guys

**From:** Brett Hiebert <BHiebert@boomltd.ca>  
**Sent:** March 11, 2020 10:47 AM  
**To:** Curtis Ellithorpe <CELLithorpe@boomltd.ca>; Andrew Silberer <ASilberer@boomltd.ca>  
**Subject:** RE: Boom Crew - on-site MOC 100

Gents,

Talked with Nick and Cole.

Cole will travel tomorrow with the picker truck for work on Friday. He will need a couple days off at the end of this shift.

Nick Needs the weekend off and he can travel up Sunday for work on Monday.

### Brett Hiebert

Project Manager

Office: 403-946-0066

Email: [Bhiebert@boomltd.ca](mailto:Bhiebert@boomltd.ca) | [www.boomltd.ca](http://www.boomltd.ca)

**From:** Curtis Ellithorpe <CELLithorpe@boomltd.ca>  
**Sent:** March 11, 2020 10:25 AM  
**To:** Andrew Silberer <ASilberer@boomltd.ca>  
**Cc:** Brett Hiebert <BHiebert@boomltd.ca>  
**Subject:** RE: Boom Crew - on-site MOC 100

Hi Andrew

Nick and Cole might need a few days off before they travel would Monday work and I will send home today Cole might be up for going straight there.

**From:** Andrew Silberer <ASilberer@boomltd.ca>  
**Sent:** Wednesday, March 11, 2020 9:48 AM  
**To:** Travis Shield <tshield@greenfireoilandgas.com>  
**Cc:** Brett Hiebert <BHiebert@boomltd.ca>; Curtis Ellithorpe <CELLithorpe@boomltd.ca>  
**Subject:** Boom Crew - on-site MOC 100

Hi Travis

The following Boom crew members will arrive in camp on the 12<sup>th</sup> and depart on the 23<sup>rd</sup> or sooner.

Worker Name (Field)	Hours	Trade
Dave Turnbull	12	Forman
Travis Anderson	12	Rig welder
Nick Macmillan	12	Journeyman Pipe/Steam
Cole Thompson	12	Journeyman Pipe/Steam

The field crew will receive the structural on the 13<sup>th</sup> and begin installation, pipe will arrive on the 16<sup>th</sup>/17<sup>th</sup>

Does Greenfire have an AWP ( manlift ) on-site that Boom could utilize for the PSV line install?

Thanks Andrew



**Andrew J. Silberer, P.Eng.**

Office: 403-946-0066 | Cell: 403-586-4549  
Email: [asilberer@boomltd.ca](mailto:asilberer@boomltd.ca) | [www.boomltd.ca](http://www.boomltd.ca)  
Box 1379, 42A McCool Crescent  
Crossfield Alberta T0M 0S0

## Maria Steele

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**From:** Travis Shield <tshield@greenfireoilandgas.com>  
**Sent:** March 12, 2020 6:35 AM  
**To:** Brett Hiebert  
**Cc:** Andrew Silberer  
**Subject:** RE: MOC-100 Fabrication

Good morning!

We would like to proceed to complete the stress relief, hardness testing and hydrotesting. Can you please move forward as we have planned and I believe we'd like to deliver the piping to our site as well. Please proceed to complete the PWHT, hardness testing and hydro and then let's confirm the timing of the delivery as it is not a rush at this point (although completing the PWHT, hardness testing and hydro is).

Thanks,

Travis Shield, P.Eng.  
Facilities Engineer  
Greenfire Oil and Gas Ltd.  
587.834.8354 (cell)  
587.315.5655 (office)  
[tshield@greenfireoilandgas.com](mailto:tshield@greenfireoilandgas.com)



**GREENFIRE**  
OIL AND GAS LTD.

**From:** Travis Shield  
**Sent:** March 11, 2020 5:21 PM  
**To:** 'Brett Hiebert' <BHiebert@boomltd.ca>  
**Cc:** 'Andrew Silberer' <ASilberer@boomltd.ca>  
**Subject:** RE: MOC-100 Fabrication

Sorry, I forgot to mention; Please let me know what the cost will be to store the structural as well versus get it shipped to site?

Thanks again.

Travis Shield, P.Eng.  
Facilities Engineer  
Greenfire Oil and Gas Ltd.  
587.834.8354 (cell)  
587.315.5655 (office)  
[tshield@greenfireoilandgas.com](mailto:tshield@greenfireoilandgas.com)



**GREENFIRE**  
OIL AND GAS LTD.



**From:** Travis Shield  
**Sent:** March 11, 2020 5:20 PM  
**To:** Brett Hiebert <[BHiebert@boomltd.ca](mailto:BHiebert@boomltd.ca)>  
**Cc:** Andrew Silberer <[ASilberer@boomltd.ca](mailto:ASilberer@boomltd.ca)>  
**Subject:** RE: MOC-100 Fabrication

Hi Brett,

Yes, that is unfortunately correct. Thanks for the note. I'll send the accounts payable the heads up that the progress payment is due as well as let them know what Boom is offering for the storage fee offer, thanks for the grace period to end of April. Please let me know what the storage fee requirements are to be after the end of next month when you get a chance? I am to understand that this project is on hold and we are waiting for oil prices to recover before we take the foot off the brakes.

Hopefully this doesn't last long because I was getting pretty stoked to crush this as we are so close.

Thanks,

Travis Shield, P.Eng.  
Facilities Engineer  
Greenfire Oil and Gas Ltd.  
587.834.8354 (cell)  
587.315.5655 (office)  
[tshield@greenfireoilandgas.com](mailto:tshield@greenfireoilandgas.com)



**GREENFIRE**  
OIL AND GAS LTD.

**From:** Brett Hiebert <[BHiebert@boomltd.ca](mailto:BHiebert@boomltd.ca)>  
**Sent:** March 11, 2020 3:45 PM  
**To:** Travis Shield <[tshield@greenfireoilandgas.com](mailto:tshield@greenfireoilandgas.com)>  
**Cc:** Andrew Silberer <[ASilberer@boomltd.ca](mailto:ASilberer@boomltd.ca)>  
**Subject:** MOC-100 Fabrication

Good Afternoon Travis,

I just received word from Andrew that this project is postponed for now. I just wanted to send you a quick note to let you know we understand the changes in the industry and look forward to working with you any way we can to help with this project. In the meantime you should be aware that fabrication of all original scope is complete. So you will be receiving the milestone invoice for this work tomorrow.

Secondly all material can be stored in Boom's yard. I will offer you free storage until the end of April and we can discuss the length of storage required once that time has expired.

Regards,



**BOOM**  
CONSTRUCTION

**Brett Hiebert**  
Project Manager  
Office: 403-946-0066  
Cell: 403-619-7111  
Email: [Bhiebert@boomltd.ca](mailto:Bhiebert@boomltd.ca) | [www.boomltd.ca](http://www.boomltd.ca)

Box 1379, 42A McCool Crescent  
Crossfield Alberta T0M 0S0

## Maria Steele

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**From:** Andrew Silberer  
**Sent:** March 13, 2020 10:07 AM  
**To:** Albert Ma; Brett Hiebert  
**Subject:** RE: MOC-125 Suspended

Thanks Albert for letting us know.

Andrew

**From:** Albert Ma <ma\_albert@hotmail.com>  
**Sent:** March 12, 2020 3:28 PM  
**To:** Andrew Silberer <ASilberer@boomltd.ca>; Brett Hiebert <BHiebert@boomltd.ca>  
**Subject:** MOC-125 Suspended

Hi guys,

As with Travis's MOC-100, we are suspending the job for now.

Thanks,

Albert Ma  
780-278-4695

## Maria Steele

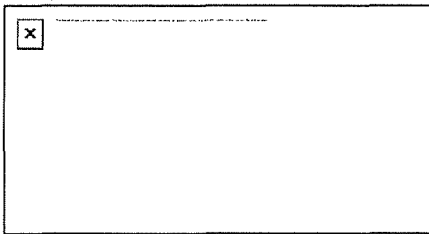
---

**From:** amy@steelheadfabrication.com  
**Sent:** April 29, 2020 1:48 PM  
**To:** Brett Hiebert  
**Cc:** steve@steelheadfabrication.com  
**Subject:** RE: Boom Job 20041

Good Afternoon Brett,

We still have the steel for Boom Job 20041 for the Greenfire MOC 100 Hangingstone Project. I'm not too sure if the area that this steel was suppose to go to was affected by the flooding but I just wanted to touch base and see if you had a status update on this yet? Thanks & have a good day!

Regards,  
Amy Bochon  
Document Control



**PLEASE NOTE:** SHIPPING/RECEIVING DEPARTMENT CLOSSES AT 3:00 PM (MONDAY TO FRIDAY)

**From:** Andrew Silberer <ASilberer@boomltd.ca>  
**Sent:** March 16, 2020 1:41 PM  
**To:** 'Steve' <steve@steelheadfabrication.com>; amy@steelheadfabrication.com  
**Cc:** Brett Hiebert <BHiebert@boomltd.ca>  
**Subject:** Boom Job 20041

Hi Steve/Amy

I have a client request to ask if the structural material can be stored at your facility until the end of April be for it is shiiped?

Thanks Andrew



**Andrew J. Silberer, P.Eng.**

Office: 403-946-0066 | Cell: 403-586-4549  
Email: [asilberer@boomltd.ca](mailto:asilberer@boomltd.ca) | [www.boomltd.ca](http://www.boomltd.ca)  
Box 1379, 42A McCool Crescent  
Crossfield Alberta T0M 0S0

## Maria Steele

---

**From:** Travis Shield <tshield@greenfireoilandgas.com>  
**Sent:** March 26, 2020 11:17 AM  
**To:** Brett Hiebert  
**Cc:** Natasha Wenckowski; Keisha Carson  
**Subject:** Re: Milestone Certificate #001 Mar 19 2020.pdf

Hi Brett

It looks good. I'll print, sign and scan after I get back to the office from vacation.

Thanks,  
Travis

Sent from my Bell Samsung device over Canada's largest network.

---

**From:** Brett Hiebert <BHiebert@boomltd.ca>  
**Sent:** Thursday, March 19, 2020 4:18:05 PM  
**To:** Travis Shield <tshield@greenfireoilandgas.com>  
**Cc:** Natasha Wenckowski <NWenckowski@boomltd.ca>; Keisha Carson <kcarson@boomltd.ca>  
**Subject:** Milestone Certificate #001 Mar 19 2020.pdf

Good afternoon Travis,

Please see attached Milestone Certificate with the discount applied for PWHT and Remaining NDE. Please sign and return so we can invoice for the completed fabrication.

Regards,



**BOOM**  
CONSTRUCTION

**Brett Hiebert**

Project Manager

Office: 403-946-0066

Cell: 403-619-7111

Email: [Bhiebert@boomltd.ca](mailto:Bhiebert@boomltd.ca) | [www.boomltd.ca](http://www.boomltd.ca)

Box 1379, 42A McCool Crescent  
Crossfield Alberta T0M 0S0



This is Exhibit "G" referred to in the Affidavit of  
Ryan Morse, sworn before me this  
6th day of May, 2021.



A Commissioner for Oaths in and for the  
Province of Alberta

**ELISABETH J. STEWART**  
Barrister & Solicitor

Date	Payroll Type	Name	Empl. #	Empl. Type	Trade	WBS	Truck Allowance	Equip. Unit #	Job No.	Customer	Form/Ticket No.	Qty	Rate Type	RT	OT	TT	Notes	Payroll Status	Review Status
2019-08-13	Labor	Kyle Scott	KYLSCO	DIRECT_HIRE	Foreman - General		No		19119	Green Fire Hangingstone Operating Corporation	19119-016-0119	9	Hourly	9	0				
2019-08-13	Labor	Jeff Smith	JEFSMI	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure		No		19119	Green Fire Hangingstone Operating Corporation	19119-016-0119	9	Hourly	9	0				
2019-08-13	Labor	Lane Sahli	LANSAH	DIRECT_HIRE	1st Year Apprentice		No		19119	Green Fire Hangingstone Operating Corporation	19119-016-0119	9	Hourly	9	0				
2019-08-13	Labor	William McGrath	WILLMCG	SUBCONTRACTOR	QA/QC Manager		No		19119	Green Fire Hangingstone Operating Corporation	19119-016-0119	4	Hourly	4	0				
2019-08-14	Labor	Kyle Scott	KYLSCO	DIRECT_HIRE	Foreman - General		No		19119	Green Fire Hangingstone Operating Corporation	19119-016-0120	6	Hourly	6	0				
2019-08-14	Labor	Jeff Smith	JEFSMI	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure		No		19119	Green Fire Hangingstone Operating Corporation	19119-016-0120	6	Hourly	6	0				
2019-08-14	Labor	Lane Sahli	LANSAH	DIRECT_HIRE	1st Year Apprentice		No		19119	Green Fire Hangingstone Operating Corporation	19119-016-0120	6	Hourly	6	0				
2019-08-14	Labor	William McGrath	WILLMCG	SUBCONTRACTOR	QA/QC Manager		No		19119	Green Fire Hangingstone Operating Corporation	19119-016-0120	4	Hourly	4	0				
2019-08-15	Labor	Kyle Scott	KYLSCO	DIRECT_HIRE	Foreman - General		No		19119	Green Fire Hangingstone Operating Corporation	19119-016-0124	3	Hourly	3	0				
2019-08-16	Labor	Kyle Scott	KYLSCO	DIRECT_HIRE	Foreman - General		No		19119	Green Fire Hangingstone Operating Corporation	19119-016-0126	4	Hourly	4	0				
2019-08-19	Labor	Kyle Scott	KYLSCO	DIRECT_HIRE	Foreman - General		No		19119	Green Fire Hangingstone Operating Corporation	19119-016-0132	6	Hourly	6	0				
2019-08-19	Labor	Khari Leeming	KHALEE	DIRECT_HIRE	Labourer - General		No		19119	Green Fire Hangingstone Operating Corporation	19119-016-0132	2	Hourly	2	0				
2019-08-19	Labor	Zac Dunham	ZACDUN	DIRECT_HIRE	3rd Year Apprentice		No		19119	Green Fire Hangingstone Operating Corporation	19119-016-0132	2	Hourly	2	0				
2019-08-27	Labor	Jeff Smith	JEFSMI	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure		No		19119	Green Fire Hangingstone Operating Corporation	19119-016-0148	8	Hourly	8	0				
2019-08-27	Labor	Kyle Scott	KYLSCO	DIRECT_HIRE	Foreman - General		No		19119	Green Fire Hangingstone Operating Corporation	19119-016-0148	2	Hourly	2	0				
2019-08-29	Labor	Jeff Smith	JEFSMI	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure		No		19119	Green Fire Hangingstone Operating Corporation	19119-016-0157	3	Hourly	3	0				
2019-08-29	Labor	Kyle Scott	KYLSCO	DIRECT_HIRE	Foreman - General		No		19119	Green Fire Hangingstone Operating Corporation	19119-016-0157	1	Hourly	1	0				
2019-09-04	Labor	Kyle Scott	KYLSCO	DIRECT_HIRE	Superintendent		No		19138	Green Fire Hangingstone Operating Corporation	19138-016-0174	4	Hourly	4	0				
2019-09-04	Labor	Jon Heatley	JONHEA	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure		No		19138	Green Fire Hangingstone Operating Corporation	19138-016-0174	8	Hourly	8	0				
2019-09-04	Labor	Ashley Smith	ASHSMI	DIRECT_HIRE	Welders Helper		No		19138	Green Fire Hangingstone Operating Corporation	19138-016-0174	8	Hourly	8	0				
2019-09-05	Labor	Kyle Scott	KYLSCO	DIRECT_HIRE	Foreman - General		No		19119	Green Fire Hangingstone Operating Corporation	19119-016-0173	8	Hourly	8	0				
2019-09-05	Labor	Zac Dunham	ZACDUN	DIRECT_HIRE	3rd Year Apprentice		No		19119	Green Fire Hangingstone Operating Corporation	19119-016-0173	6	Hourly	6	0				
2019-09-05	Labor	Jon Heatley	JONHEA	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure		No		19119	Green Fire Hangingstone Operating Corporation	19119-016-0173	6	Hourly	6	0				
2019-09-05	Labor	Dirk Lundy	DIRLUN	DIRECT_HIRE	3rd Year Apprentice		No		19119	Green Fire Hangingstone Operating Corporation	19119-016-0173	8	Hourly	8	0				
2019-09-06	Labor	Kyle Scott	KYLSCO	DIRECT_HIRE	Foreman - General		No		19119	Green Fire Hangingstone Operating Corporation	19119-016-0176	12	Hourly	8	4				
2019-09-06	Labor	Zac Dunham	ZACDUN	DIRECT_HIRE	3rd Year Apprentice		No		19119	Green Fire Hangingstone Operating Corporation	19119-016-0176	8	Hourly	8	0				
2019-09-06	Labor	Dirk Lundy	DIRLUN	DIRECT_HIRE	3rd Year Apprentice		No		19119	Green Fire Hangingstone Operating Corporation	19119-016-0176	12	Hourly	8	4				
2019-09-06	Labor	Jon Heatley	JONHEA	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure		No		19119	Green Fire Hangingstone Operating Corporation	19119-016-0176	12	Hourly	12	0				
2019-09-07	Labor	Kyle Scott	KYLSCO	DIRECT_HIRE	Foreman - General		No		19119	Green Fire Hangingstone Operating Corporation	19119-016-0178	12	Hourly	0	12				
2019-09-07	Labor	Jon Heatley	JONHEA	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure		No		19119	Green Fire Hangingstone Operating Corporation	19119-016-0178	12	Hourly	12	0				
2019-09-07	Labor	Zac Dunham	ZACDUN	DIRECT_HIRE	3rd Year Apprentice		No		19119	Green Fire Hangingstone Operating Corporation	19119-016-0178	12	Hourly	0	12				
2019-09-07	Labor	Dirk Lundy	DIRLUN	DIRECT_HIRE	3rd Year Apprentice		No		19119	Green Fire Hangingstone Operating Corporation	19119-016-0178	12	Hourly	0	12				
2019-09-08	Labor	Kyle Scott	KYLSCO	DIRECT_HIRE	Foreman - General		No		19119	Green Fire Hangingstone Operating Corporation	19119-016-0179	12	Hourly	0	12				
2019-09-08	Labor	Jon Heatley	JONHEA	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure		No		19119	Green Fire Hangingstone Operating Corporation	19119-016-0179	12	Hourly	12	0				
2019-09-08	Labor	Dirk Lundy	DIRLUN	DIRECT_HIRE	3rd Year Apprentice		No		19119	Green Fire Hangingstone Operating Corporation	19119-016-0179	12	Hourly	0	12				
2019-09-08	Labor	Zac Dunham	ZACDUN	DIRECT_HIRE	3rd Year Apprentice		No		19119	Green Fire Hangingstone Operating Corporation	19119-016-0179	12	Hourly	0	12				
2019-09-09	Labor	Kyle Scott	KYLSCO	DIRECT_HIRE	Foreman - General		No		19119	Green Fire Hangingstone Operating Corporation	19119-016-0180	14	Hourly	8	6				

2019-09-09	Labor	Zac Dunham	ZACDUN	DIRECT_HIRE	3rd Year Apprentice		No			19119	Green Fire Hangingstone Operating Corporation	19119-016-0180	12	Hourly	8	4			
2019-09-09	Labor	Dirk Lundy	DIRLUN	DIRECT_HIRE	3rd Year Apprentice		No			19119	Green Fire Hangingstone Operating Corporation	19119-016-0180	12	Hourly	8	4			
2019-09-09	Labor	Jon Heatley	JONHEA	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure		No			19119	Green Fire Hangingstone Operating Corporation	19119-016-0180	12	Hourly	12	0			
2019-09-10	Labor	Kyle Scott	KYLSCO	DIRECT_HIRE	Foreman - General		No			19119	Green Fire Hangingstone Operating Corporation	19119-016-0181	16	Hourly	8	8			
2019-09-10	Labor	Dirk Lundy	DIRLUN	DIRECT_HIRE	3rd Year Apprentice		No			19119	Green Fire Hangingstone Operating Corporation	19119-016-0181	16	Hourly	8	8			
2019-09-10	Labor	Zac Dunham	ZACDUN	DIRECT_HIRE	3rd Year Apprentice		No			19119	Green Fire Hangingstone Operating Corporation	19119-016-0181	16	Hourly	8	8			
2019-09-10	Labor	Jon Heatley	JONHEA	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure		No			19119	Green Fire Hangingstone Operating Corporation	19119-016-0181	16	Hourly	16	0			
2019-09-11	Labor	Kyle Scott	KYLSCO	DIRECT_HIRE	Foreman - General		No			19119	Green Fire Hangingstone Operating Corporation	19119-016-0182	5	Hourly	0	5			
2019-09-26	Labor	Freddy Smith	FRESMI	DIRECT_HIRE	Truck Driver		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0200	9	Hourly	9	0			
2019-09-26	Labor	Scott Patterson	SCOPAT	SUBCONTRACTOR	QA/QC Advisor		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0200	12	Hourly	12	0			
2019-09-27	Labor	Freddy Smith	FRESMI	DIRECT_HIRE	Truck Driver		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0201	7	Hourly	7	0			
2019-09-28	Labor	Kyle Scott	KYLSCO	DIRECT_HIRE	Foreman - General		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0202	12	Hourly	8	4			
2019-09-28	Labor	Scott Patterson	SCOPAT	SUBCONTRACTOR	QA/QC Manager		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0202	12	Hourly	8	4			
2019-09-28	Labor	Zac Dunham	ZACDUN	DIRECT_HIRE	3rd Year Apprentice		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0202	12	Hourly	8	4			
2019-09-28	Labor	Lenny Rostotski	LENROS	DIRECT_HIRE	Welder w/Rig CWB or B-Pressure		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0202	12	Hourly	12	0			
2019-09-28	Labor	Ashton Van	ASHVAN	DIRECT_HIRE	2nd Year Apprentice		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0202	12	Hourly	8	4			
2019-09-28	Labor	Cole Thompson	COLTHO	SUBCONTRACTOR	Journeyman		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0202	12	Hourly	8	4			
2019-09-28	Labor	Gerald Burd	GERBUR	DIRECT_HIRE	Equipment Operator - Principle		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0202	12	Hourly	8	4			
2019-09-28	Labor	Tyler Horner	TYLHOR	SUBCONTRACTOR	Journeyman		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0202	12	Hourly	8	4			
2019-09-28	Labor	Jeremy Herbin	JERHER	DIRECT_HIRE	2nd Year Apprentice		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0202	12	Hourly	8	4			
2019-09-28	Labor	Mick Antos	MICANT	DIRECT_HIRE	Journeyman		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0202	12	Hourly	8	4			
2019-09-28	Labor	Clinton Casey	CLJCAS	DIRECT_HIRE	Journeyman		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0202	12	Hourly	8	4			
2019-09-28	Labor	Dylan Brown	DYLBRO1	DIRECT_HIRE	1st Year Apprentice		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0202	12	Hourly	8	4			
2019-09-28	Labor	Rick Delgleish	RICDAL	SUBCONTRACTOR	Journeyman		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0202	4	Hourly	4	0			
2019-09-28	Labor	Will Bacon	WILBAC	DIRECT_HIRE	Journeyman		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0202	4	Hourly	4	0			
2019-09-28	Labor	Jordan Breslin	JORBRE	DIRECT_HIRE	Journeyman		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0202	4	Hourly	4	0			
2019-09-28	Labor	Taylor Brown	TAYBRO	DIRECT_HIRE	2nd Year Apprentice		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0202	4	Hourly	4	0			
2019-09-29	Labor	Kyle Scott	KYLSCO	DIRECT_HIRE	Foreman - General		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0203	14	Hourly	8	6			1-9 Items
2019-09-29	Labor	Scott Patterson	SCOPAT	SUBCONTRACTOR	QA/QC Manager		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0203	12	Hourly	8	4			6&9 Items
2019-09-29	Labor	Daniel Babchuk	DANBAB	SUBCONTRACTOR	Journeyman		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0203	12	Hourly	8	4			1,7,2 Items
2019-09-29	Labor	Cole Thompson	COLTHO	SUBCONTRACTOR	Journeyman		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0203	12	Hourly	8	4			1,7,2 Items
2019-09-29	Labor	Mick Antos	MICANT	DIRECT_HIRE	Journeyman		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0203	12	Hourly	8	4			1,2,3,7 Items
2019-09-29	Labor	Gerald Burd	GERBUR	DIRECT_HIRE	Equipment Operator - Principle		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0203	12	Hourly	8	4			1,8 Items
2019-09-29	Labor	Lenny Rostotski	LENROS	DIRECT_HIRE	Welder w/Rig CWB or B-Pressure		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0203	12	Hourly	12	0			1,6 Items
2019-09-29	Labor	Ashton Van	ASHVAN	DIRECT_HIRE	2nd Year Apprentice		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0203	12	Hourly	8	4			1,6 Items
2019-09-29	Labor	Zac Dunham	ZACDUN	DIRECT_HIRE	3rd Year Apprentice		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0203	12	Hourly	8	4			1,3,4,5 Items
2019-09-29	Labor	Tyler Horner	TYLHOR	SUBCONTRACTOR	Journeyman		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0203	12	Hourly	8	4			1,3,4,5 Items
2019-09-29	Labor	Dylan Brown	DYLBRO1	DIRECT_HIRE	1st Year Apprentice		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0203	12	Hourly	8	4			1,3,4,5 Items

2019-09-29	Labor	Jeremy Herbin	JERHER	DIRECT_HIRE	2nd Year Apprentice		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0203	12	Hourly	8	4		1,3,4,5 Items	
2019-09-29	Labor	Clinton Casey	CLUCAS	DIRECT_HIRE	Journeyman		No		19146	Green Fire Hangingstone Operating Corporation	19146-016-0206	12	Hourly	8	4			
2019-09-29	Labor	Taylor Brown	TAYBRO	DIRECT_HIRE	2nd Year Apprentice		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0207	12	Hourly	8	4			
2019-09-29	Labor	Rick Dalgleish	RICDAL	SUBCONTRACTOR	Journeyman		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0207	12	Hourly	8	4			
2019-09-29	Labor	Will Bacon	WILBAC	DIRECT_HIRE	Journeyman		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0207	12	Hourly	8	4			
2019-09-29	Labor	Jordan Brenin	JORBRE	DIRECT_HIRE	Journeyman		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0207	12	Hourly	8	4			
2019-09-30	Labor	Clinton Casey	CLUCAS	DIRECT_HIRE	Journeyman		No		19146	Green Fire Hangingstone Operating Corporation	19146-016-0208	12	Hourly	8	4			
2019-09-30	Labor	Kyle Scott	KYLSCO	DIRECT_HIRE	Foreman - General		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0209	13	Hourly	8	5			
2019-09-30	Labor	Scott Patterson	SCOPAT	SUBCONTRACTOR	QA/QC Advisor		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0209	12	Hourly	8	4			
2019-09-30	Labor	Zac Dunham	ZACDUN	DIRECT_HIRE	3rd Year Apprentice		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0209	12	Hourly	8	4			
2019-09-30	Labor	Lenny Rostotski	LENROS	DIRECT_HIRE	Welder w/Rig CWB or B-Pressure		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0209	12	Hourly	12	0			
2019-09-30	Labor	Cole Thompson	COLTHO	SUBCONTRACTOR	Journeyman		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0209	12	Hourly	8	4			
2019-09-30	Labor	Gerald Burd	GERBUR	DIRECT_HIRE	Equipment Operator - Principle		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0209	12	Hourly	8	4			
2019-09-30	Labor	Tyler Horner	TYLHOR	SUBCONTRACTOR	Journeyman		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0209	12	Hourly	8	4			
2019-09-30	Labor	Jeremy Herbin	JERHER	DIRECT_HIRE	2nd Year Apprentice		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0209	12	Hourly	8	4			
2019-09-30	Labor	Mick Antos	MICANT	DIRECT_HIRE	Journeyman		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0209	12	Hourly	8	4			
2019-09-30	Labor	Dylan Brown	DYLBRO1	DIRECT_HIRE	1st Year Apprentice		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0209	12	Hourly	8	4			
2019-09-30	Labor	Ashton Van	ASHVAN1	DIRECT_HIRE	2nd Year Apprentice		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0209	12	Hourly	8	4			
2019-09-30	Labor	Daniel Babchuk	DANBAB	SUBCONTRACTOR	Journeyman		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0209	12	Hourly	8	4			
2019-09-30	Labor	Taylor Brown	TAYBRO	DIRECT_HIRE	2nd Year Apprentice		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0212	12	Hourly	8	4			
2019-09-30	Labor	Rick Dalgleish	RICDAL	SUBCONTRACTOR	Journeyman		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0212	12	Hourly	8	4			
2019-09-30	Labor	Will Bacon	WILBAC	DIRECT_HIRE	Journeyman		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0212	12	Hourly	8	4			
2019-09-30	Labor	Jordan Brenin	JORBRE	DIRECT_HIRE	Journeyman		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0212	12	Hourly	8	4			
2019-10-01	Labor	Clinton Casey	CLUCAS	DIRECT_HIRE	Journeyman		No		19146	Green Fire Hangingstone Operating Corporation	19146-016-0210	12	Hourly	8	4			
2019-10-01	Labor	Kyle Scott	KYLSCO	DIRECT_HIRE	Foreman - General		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0211	13	Hourly	8	5			
2019-10-01	Labor	Scott Patterson	SCOPAT	SUBCONTRACTOR	QA/QC Advisor		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0211	12	Hourly	8	4			
2019-10-01	Labor	Zac Dunham	ZACDUN	DIRECT_HIRE	3rd Year Apprentice		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0211	12	Hourly	8	4			
2019-10-01	Labor	Lenny Rostotski	LENROS	DIRECT_HIRE	Welder w/Rig CWB or B-Pressure		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0211	12	Hourly	12	0			
2019-10-01	Labor	Cole Thompson	COLTHO	SUBCONTRACTOR	Journeyman		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0211	12	Hourly	8	4			
2019-10-01	Labor	Gerald Burd	GERBUR	DIRECT_HIRE	Equipment Operator - Principle		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0211	12	Hourly	8	4			
2019-10-01	Labor	Tyler Horner	TYLHOR	SUBCONTRACTOR	Journeyman		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0211	12	Hourly	8	4			
2019-10-01	Labor	Jeremy Herbin	JERHER	DIRECT_HIRE	2nd Year Apprentice		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0211	12	Hourly	8	4			
2019-10-01	Labor	Mick Antos	MICANT	DIRECT_HIRE	Journeyman		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0211	12	Hourly	8	4			
2019-10-01	Labor	Clinton Casey	CLUCAS	DIRECT_HIRE	Journeyman		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0211	12	Hourly	8	4			
2019-10-01	Labor	Dylan Brown	DYLBRO1	DIRECT_HIRE	1st Year Apprentice		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0211	12	Hourly	8	4			
2019-10-01	Labor	Jeremy Herbin	JERHER	DIRECT_HIRE	2nd Year Apprentice		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0211	12	Hourly	8	4			
2019-10-01	Labor	Taylor Brown	TAYBRO	DIRECT_HIRE	2nd Year Apprentice		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0213	12	Hourly	8	4			
2019-10-01	Labor	Rick Dalgleish	RICDAL	SUBCONTRACTOR	Journeyman		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0213	12	Hourly	8	4			

2019-10-01	Labor	Will Bacon	WLBAC	DIRECT_HIRE	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0213	12	Hourly	8	4				
2019-10-01	Labor	Jordan Brenin	JORBRE	DIRECT_HIRE	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0213	12	Hourly	8	4				
2019-10-02	Labor	Clinton Casey	CLUCAS	DIRECT_HIRE	Journeyman	No			19146	Green Fire Hangingstone Operating Corporation	19146-016-0216	12	Hourly	8	4				
2019-10-02	Labor	Kyle Scott	KYLSCO	DIRECT_HIRE	Foreman - General	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0214	13	Hourly	8	5				
2019-10-02	Labor	Scott Patterson	SCOPAT	SUBCONTRACTOR	QA/QC Manager	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0214	12	Hourly	8	4				
2019-10-02	Labor	Zac Dunhame	ZACDUN	DIRECT_HIRE	3rd Year Apprentice	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0214	12	Hourly	8	4				
2019-10-02	Labor	Lenny Rostotski	LENROS	DIRECT_HIRE	Welder w/Rig CWB or B-Pressure	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0214	12	Hourly	12	0				
2019-10-02	Labor	Cole Thompson	COLTHO	SUBCONTRACTOR	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0214	12	Hourly	8	4				
2019-10-02	Labor	Gerald Burd	GERBUR	DIRECT_HIRE	Equipment Operator - Principle	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0214	12	Hourly	8	4				
2019-10-02	Labor	Tyler Horner	TYLHOR	SUBCONTRACTOR	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0214	12	Hourly	8	4				
2019-10-02	Labor	Jeremy Herbin	JERHER	DIRECT_HIRE	2nd Year Apprentice	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0214	12	Hourly	8	4				
2019-10-02	Labor	Mick Antos	MICANT	DIRECT_HIRE	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0214	12	Hourly	8	4				
2019-10-02	Labor	Ashton Van	ASHVAN1	DIRECT_HIRE	2nd Year Apprentice	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0214	12	Hourly	8	4				
2019-10-02	Labor	Dylan Brown	DYLBRO1	DIRECT_HIRE	1st Year Apprentice	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0214	12	Hourly	8	4				
2019-10-02	Labor	Daniel Babchuk	DANBAB	SUBCONTRACTOR	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0214	12	Hourly	8	4				
2019-10-02	Labor	Taylor Brown	TAYBRO	DIRECT_HIRE	2nd Year Apprentice	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0217	12	Hourly	8	4				
2019-10-02	Labor	Rick Dalgleish	RICDAL	SUBCONTRACTOR	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0217	12	Hourly	8	4				
2019-10-02	Labor	Will Bacon	WLBAC	DIRECT_HIRE	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0217	12	Hourly	8	4				
2019-10-02	Labor	Jordan Brenin	JORBRE	DIRECT_HIRE	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0217	12	Hourly	8	4				
2019-10-03	Labor	Kyle Scott	KYLSCO	DIRECT_HIRE	Foreman - General	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0216	13	Hourly	8	5				
2019-10-03	Labor	Scott Patterson	SCOPAT	SUBCONTRACTOR	QA/QC Manager	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0218	12	Hourly	8	4				
2019-10-03	Labor	Ashton Van	ASHVAN1	DIRECT_HIRE	2nd Year Apprentice	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0218	12	Hourly	8	4				
2019-10-03	Labor	Zac Dunhame	ZACDUN	DIRECT_HIRE	3rd Year Apprentice	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0218	12	Hourly	8	4				
2019-10-03	Labor	Lenny Rostotski	LENROS	DIRECT_HIRE	Welder w/Rig CWB or B-Pressure	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0218	12	Hourly	12	0				
2019-10-03	Labor	Cole Thompson	COLTHO	SUBCONTRACTOR	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0218	12	Hourly	8	4				
2019-10-03	Labor	Gerald Burd	GERBUR	DIRECT_HIRE	Equipment Operator - Principle	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0218	12	Hourly	8	4				
2019-10-03	Labor	Tyler Horner	TYLHOR	SUBCONTRACTOR	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0218	12	Hourly	8	4				
2019-10-03	Labor	Jeremy Herbin	JERHER	DIRECT_HIRE	2nd Year Apprentice	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0218	12	Hourly	8	4				
2019-10-03	Labor	Mick Antos	MICANT	DIRECT_HIRE	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0218	12	Hourly	8	4				
2019-10-03	Labor	Daniel Babchuk	DANBAB	SUBCONTRACTOR	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0218	12	Hourly	8	4				
2019-10-03	Labor	Dylan Brown	DYLBRO1	DIRECT_HIRE	1st Year Apprentice	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0218	12	Hourly	8	4				
2019-10-03	Labor	Clinton Casey	CLUCAS	DIRECT_HIRE	Journeyman	No			19146	Green Fire Hangingstone Operating Corporation	19146-016-0219	12	Hourly	8	4				
2019-10-03	Labor	Roy Reed	ROYREE		3rd Year Apprentice	No			19146	Green Fire Hangingstone Operating Corporation	19146-016-0219	12	Hourly	8	4				
2019-10-03	Labor	Taylor Brown	TAYBRO	DIRECT_HIRE	2nd Year Apprentice	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0221	12	Hourly	8	4				
2019-10-03	Labor	Rick Dalgleish	RICDAL	SUBCONTRACTOR	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0221	12	Hourly	8	4				
2019-10-03	Labor	Will Bacon	WLBAC	DIRECT_HIRE	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0221	12	Hourly	8	4				
2019-10-03	Labor	Jordan Brenin	JORBRE	DIRECT_HIRE	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0221	12	Hourly	8	4				
2019-10-04	Labor	Clinton Casey	CLUCAS	DIRECT_HIRE	Journeyman	No			19146	Green Fire Hangingstone Operating Corporation	19146-016-0220	12	Hourly	0	12				



2019-10-04	Labor	Roy Reed	ROYREE		3rd Year Apprentice	No			19146	Green Fire Hangingstone Operating Corporation	19146-016-0220	12	Hourly	0	12			
2019-10-04	Labor	Kyle Scott	KYLSOO	DIRECT_HIRE	Foreman - General	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0222	13	Hourly	0	13			
2019-10-04	Labor	Scott Patterson	SCOPAT	SUBCONTRACTOR	QA/QC Manager	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0222	12	Hourly	0	12			
2019-10-04	Labor	Daniel Babchuk	DANBAB	SUBCONTRACTOR	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0222	12	Hourly	0	12			
2019-10-04	Labor	Zac Dunham	ZACDUN	DIRECT_HIRE	3rd Year Apprentice	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0222	12	Hourly	0	12			
2019-10-04	Labor	Lenny Rostotski	LENROS	DIRECT_HIRE	Welder w/Rig CWB or B-Pressure	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0222	12	Hourly	12	0			
2019-10-04	Labor	Cole Thompson	COLTHO	SUBCONTRACTOR	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0222	12	Hourly	0	12			
2019-10-04	Labor	Gerald Burd	GERBUR	DIRECT_HIRE	Equipment Operator - Principle	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0222	12	Hourly	0	12			
2019-10-04	Labor	Tyler Horner	TYLHOR	SUBCONTRACTOR	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0222	12	Hourly	0	12			
2019-10-04	Labor	Jeremy Herbin	JERHER	DIRECT_HIRE	2nd Year Apprentice	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0222	12	Hourly	0	12			
2019-10-04	Labor	Mick Antos	MICANT	DIRECT_HIRE	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0222	12	Hourly	0	12			
2019-10-04	Labor	Ashton Van	ASHVAN	DIRECT_HIRE	2nd Year Apprentice	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0222	12	Hourly	0	12			
2019-10-04	Labor	Dylan Brown	DYLBRO1	DIRECT_HIRE	1st Year Apprentice	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0222	12	Hourly	0	12			
2019-10-04	Labor	Taylor Brown	TAYBRO	DIRECT_HIRE	2nd Year Apprentice	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0224	12	Hourly	0	12			
2019-10-04	Labor	Rick Dalgleish	RICDAL	SUBCONTRACTOR	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0224	12	Hourly	0	12			
2019-10-04	Labor	Will Bacon	WILBAC	DIRECT_HIRE	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0224	12	Hourly	0	12			
2019-10-04	Labor	Jordan Brenin	JORBRE	DIRECT_HIRE	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0224	12	Hourly	0	12			
2019-10-05	Labor	Clinton Casey	CLUCAS	DIRECT_HIRE	Journeyman	No			19146	Green Fire Hangingstone Operating Corporation	19146-016-0223	12	Hourly	0	12			
2019-10-05	Labor	Roy Reed	ROYREE		3rd Year Apprentice	No			19146	Green Fire Hangingstone Operating Corporation	19146-016-0223	12	Hourly	0	12			
2019-10-05	Labor	Taylor Brown	TAYBRO	DIRECT_HIRE	2nd Year Apprentice	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0225	12	Hourly	0	12			
2019-10-05	Labor	Rick Dalgleish	RICDAL	SUBCONTRACTOR	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0225	12	Hourly	0	12			
2019-10-05	Labor	Will Bacon	WILBAC	DIRECT_HIRE	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0225	12	Hourly	0	12			
2019-10-05	Labor	Jordan Brenin	JORBRE	DIRECT_HIRE	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0225	12	Hourly	0	12			
2019-10-05	Labor	Kyle Scott	KYLSOO	DIRECT_HIRE	Foreman - General	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0226	13	Hourly	0	13			
2019-10-05	Labor	Scott Patterson	SCOPAT	SUBCONTRACTOR	QA/QC Manager	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0226	12	Hourly	0	12			
2019-10-05	Labor	Ashton Van	ASHVAN	DIRECT_HIRE	2nd Year Apprentice	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0226	12	Hourly	0	12			
2019-10-05	Labor	Zac Dunham	ZACDUN	DIRECT_HIRE	3rd Year Apprentice	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0226	12	Hourly	0	12			
2019-10-05	Labor	Lenny Rostotski	LENROS	DIRECT_HIRE	Welder w/Rig CWB or B-Pressure	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0226	12	Hourly	12	0			
2019-10-05	Labor	Cole Thompson	COLTHO	SUBCONTRACTOR	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0226	12	Hourly	0	12			
2019-10-05	Labor	Gerald Burd	GERBUR	DIRECT_HIRE	Equipment Operator - Principle	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0226	12	Hourly	0	12			
2019-10-05	Labor	Tyler Horner	TYLHOR	SUBCONTRACTOR	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0226	12	Hourly	0	12			
2019-10-05	Labor	Jeremy Herbin	JERHER	DIRECT_HIRE	2nd Year Apprentice	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0226	12	Hourly	0	12			
2019-10-05	Labor	Mick Antos	MICANT	DIRECT_HIRE	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0226	12	Hourly	0	12			
2019-10-05	Labor	Daniel Babchuk	DANBAB	SUBCONTRACTOR	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0226	12	Hourly	0	12			
2019-10-05	Labor	Dylan Brown	DYLBRO1	DIRECT_HIRE	1st Year Apprentice	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0226	12	Hourly	0	12			
2019-10-06	Labor	Kyle Scott	KYLSOO	DIRECT_HIRE	Foreman - General	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0226	13	Hourly	8	5			
2019-10-06	Labor	Scott Patterson	SCOPAT	SUBCONTRACTOR	QA/QC Manager	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0228	12	Hourly	8	4			
2019-10-06	Labor	Daniel Babchuk	DANBAB	SUBCONTRACTOR	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0228	12	Hourly	8	4			

2019-10-06	Labor	Zac Dunham	ZACDUN	DIRECT_HIRE	3rd Year Apprentice	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0226	12	Hourly	8	4			
2019-10-06	Labor	Lenny Rostotski	LENROS	DIRECT_HIRE	Welder w/Rig CWB or B-Pressure	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0226	12	Hourly	8	4			
2019-10-06	Labor	Cole Thompson	COLTHO	SUBCONTRACTOR	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0226	12	Hourly	8	4			
2019-10-06	Labor	Gerald Burd	GERBUR	DIRECT_HIRE	Equipment Operator - Principle	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0226	12	Hourly	8	4			
2019-10-06	Labor	Tyler Horner	TYLHOR	SUBCONTRACTOR	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0226	12	Hourly	8	4			
2019-10-06	Labor	Jeremy Herbin	JERHER	DIRECT_HIRE	2nd Year Apprentice	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0226	12	Hourly	8	4			
2019-10-06	Labor	Mick Antos	MICANT	DIRECT_HIRE	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0226	12	Hourly	8	4			
2019-10-06	Labor	Ashton Van	ASHVAN	DIRECT_HIRE	2nd Year Apprentice	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0226	12	Hourly	8	4			
2019-10-06	Labor	Dylan Brown	DYLBRO1	DIRECT_HIRE	1st Year Apprentice	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0226	12	Hourly	8	4			
2019-10-06	Labor	Taylor Brown	TAYBRO	DIRECT_HIRE	2nd Year Apprentice	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0229	12	Hourly	8	4			
2019-10-06	Labor	Rick Dalgleish	RICDAL	SUBCONTRACTOR	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0229	12	Hourly	8	4			
2019-10-06	Labor	Will Bacon	WILBAC	DIRECT_HIRE	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0229	12	Hourly	8	4			
2019-10-06	Labor	Jordan Brenin	JORBRE	DIRECT_HIRE	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0229	12	Hourly	8	4			
2019-10-06	Labor	Clinton Casey	CLJCAS	DIRECT_HIRE	Journeyman	No			19146	Green Fire Hangingstone Operating Corporation	19146-016-0227	12	Hourly	8	4			
2019-10-06	Labor	Roy Reed	ROYREE		3rd Year Apprentice	No			19146	Green Fire Hangingstone Operating Corporation	19146-016-0227	12	Hourly	8	4			
2019-10-07	Labor	Clinton Casey	CLJCAS	DIRECT_HIRE	Journeyman	No			19146	Green Fire Hangingstone Operating Corporation	19146-016-0230	12	Hourly	8	4			
2019-10-07	Labor	Roy Reed	ROYREE		3rd Year Apprentice	No			19146	Green Fire Hangingstone Operating Corporation	19146-016-0230	12	Hourly	8	4			
2019-10-07	Labor	Kyle Scott	KYLSCO	DIRECT_HIRE	Foreman - General	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0231	13	Hourly	8	5			
2019-10-07	Labor	Scott Patterson	SCOPAT	SUBCONTRACTOR	QA/QC Manager	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0231	14	Hourly	8	6			
2019-10-07	Labor	Daniel Babchuk	DANBAB	SUBCONTRACTOR	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0231	12	Hourly	8	4			
2019-10-07	Labor	Zac Dunham	ZACDUN	DIRECT_HIRE	3rd Year Apprentice	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0231	12	Hourly	8	4			
2019-10-07	Labor	Lenny Rostotski	LENROS	DIRECT_HIRE	Welder w/Rig CWB or B-Pressure	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0231	12	Hourly	12	0			
2019-10-07	Labor	Cole Thompson	COLTHO	SUBCONTRACTOR	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0231	12	Hourly	8	4			
2019-10-07	Labor	Gerald Burd	GERBUR	DIRECT_HIRE	Equipment Operator - Principle	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0231	12	Hourly	8	4			
2019-10-07	Labor	Tyler Horner	TYLHOR	SUBCONTRACTOR	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0231	12	Hourly	8	4			
2019-10-07	Labor	Jeremy Herbin	JERHER	DIRECT_HIRE	2nd Year Apprentice	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0231	12	Hourly	8	4			
2019-10-07	Labor	Mick Antos	MICANT	DIRECT_HIRE	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0231	12	Hourly	8	4			
2019-10-07	Labor	Ashton Van	ASHVAN	DIRECT_HIRE	2nd Year Apprentice	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0231	12	Hourly	8	4			
2019-10-07	Labor	Dylan Brown	DYLBRO1	DIRECT_HIRE	1st Year Apprentice	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0231	12	Hourly	8	4			
2019-10-07	Labor	Taylor Brown	TAYBRO	DIRECT_HIRE	2nd Year Apprentice	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0233	12	Hourly	8	4			
2019-10-07	Labor	Rick Dalgleish	RICDAL	SUBCONTRACTOR	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0233	12	Hourly	8	4			
2019-10-07	Labor	Will Bacon	WILBAC	DIRECT_HIRE	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0233	12	Hourly	8	4			
2019-10-07	Labor	Jordan Brenin	JORBRE	DIRECT_HIRE	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0233	12	Hourly	8	4			
2019-10-08	Labor	Clinton Casey	CLJCAS	DIRECT_HIRE	Journeyman	No			19146	Green Fire Hangingstone Operating Corporation	19146-016-0232	12	Hourly	8	4			
2019-10-08	Labor	Roy Reed	ROYREE		3rd Year Apprentice	No			19146	Green Fire Hangingstone Operating Corporation	19146-016-0232	12	Hourly	8	4			
2019-10-08	Labor	Taylor Brown	TAYBRO	DIRECT_HIRE	2nd Year Apprentice	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0235	12	Hourly	8	4			
2019-10-08	Labor	Rick Dalgleish	RICDAL	SUBCONTRACTOR	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0235	12	Hourly	8	4			
2019-10-08	Labor	Will Bacon	WILBAC	DIRECT_HIRE	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0235	12	Hourly	8	4			

2019-10-08	Labor	Jordan Brenin	JORBRE	DIRECT_HIRE	Journeyman		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0235	12	Hourly	8	4			
2019-10-08	Labor	Kyle Scott	KYLSKO	DIRECT_HIRE	Foreman - General		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0234	13	Hourly	8	5			
2019-10-08	Labor	Scott Patterson	SCOPAT	SUBCONTRACTOR	QA/QC Manager		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0234	14	Hourly	8	6			
2019-10-08	Labor	Danial Babchuk	DANBAB	SUBCONTRACTOR	Journeyman		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0234	12	Hourly	8	4			
2019-10-08	Labor	Zac Dunham	ZACDUN	DIRECT_HIRE	3rd Year Apprentice		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0234	12	Hourly	8	4			
2019-10-08	Labor	Lenny Rodotki	LENROS	DIRECT_HIRE	Welder w/Reg CWB or B-Pressure		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0234	12	Hourly	12	0			
2019-10-08	Labor	Cole Thompson	COLTHO	SUBCONTRACTOR	Journeyman		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0234	12	Hourly	8	4			
2019-10-08	Labor	Gerald Burd	GERBUR	DIRECT_HIRE	Equipment Operator - Principle		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0234	12	Hourly	8	4			
2019-10-08	Labor	Tyler Horner	TYLHOR	SUBCONTRACTOR	Journeyman		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0234	12	Hourly	8	4			
2019-10-08	Labor	Jeremy Herbin	JERHER	DIRECT_HIRE	2nd Year Apprentice		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0234	12	Hourly	8	4			
2019-10-08	Labor	Mick Antos	MICAIT	DIRECT_HIRE	Journeyman		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0234	12	Hourly	8	4			
2019-10-08	Labor	Ashton Van	ASHVANI	DIRECT_HIRE	2nd Year Apprentice		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0234	12	Hourly	8	4			
2019-10-08	Labor	Dylan Brown	DYLBRO1	DIRECT_HIRE	1st Year Apprentice		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0234	12	Hourly	8	4			
2019-10-09	Labor	Clinton Casey	CLICAS	DIRECT_HIRE	Journeyman		No		19146	Green Fire Hangingstone Operating Corporation	19146-016-0236	12	Hourly	8	4			
2019-10-09	Labor	Roy Reed	ROYREE		3rd Year Apprentice		No		19146	Green Fire Hangingstone Operating Corporation	19146-016-0236	12	Hourly	8	4			
2019-10-09	Labor	Jeremy Herbin	JERHER	DIRECT_HIRE	2nd Year Apprentice		No		19146	Green Fire Hangingstone Operating Corporation	19146-016-0236	12	Hourly	8	4			
2019-10-09	Labor	Kyle Scott	KYLSKO	DIRECT_HIRE	Foreman - General		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0237	13	Hourly	8	5			
2019-10-09	Labor	Scott Patterson	SCOPAT	SUBCONTRACTOR	QA/QC Manager		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0237	12	Hourly	8	4			
2019-10-09	Labor	Danial Babchuk	DANBAB	SUBCONTRACTOR	Journeyman		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0237	12	Hourly	8	4			
2019-10-09	Labor	Zac Dunham	ZACDUN	DIRECT_HIRE	3rd Year Apprentice		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0237	12	Hourly	8	4			
2019-10-09	Labor	Lenny Rodotki	LENROS	DIRECT_HIRE	Welder w/Reg CWB or B-Pressure		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0237	12	Hourly	12	0			
2019-10-09	Labor	Cole Thompson	COLTHO	SUBCONTRACTOR	Journeyman		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0237	12	Hourly	8	4			
2019-10-09	Labor	Gerald Burd	GERBUR	DIRECT_HIRE	Equipment Operator - Principle		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0237	12	Hourly	8	4			
2019-10-09	Labor	Tyler Horner	TYLHOR	SUBCONTRACTOR	Journeyman		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0237	12	Hourly	8	4			
2019-10-09	Labor	Mick Antos	MICAIT	DIRECT_HIRE	Journeyman		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0237	12	Hourly	8	4			
2019-10-09	Labor	Ashton Van	ASHVANI	DIRECT_HIRE	2nd Year Apprentice		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0237	12	Hourly	8	4			
2019-10-09	Labor	Dylan Brown	DYLBRO1	DIRECT_HIRE	1st Year Apprentice		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0237	12	Hourly	8	4			
2019-10-09	Labor	Taylor Brown	TAYBRO	DIRECT_HIRE	2nd Year Apprentice		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0238	12	Hourly	8	4			
2019-10-09	Labor	Rick Dalgleish	RICDAL	SUBCONTRACTOR	Journeyman		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0238	12	Hourly	8	4			
2019-10-09	Labor	Will Bacon	WILBAC	DIRECT_HIRE	Journeyman		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0238	12	Hourly	8	4			
2019-10-09	Labor	Jordan Brenin	JORBRE	DIRECT_HIRE	Journeyman		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0238	12	Hourly	8	4			
2019-10-10	Labor	Clinton Casey	CLICAS	DIRECT_HIRE	Journeyman		No		19146	Green Fire Hangingstone Operating Corporation	19146-016-0239	12	Hourly	8	4			
2019-10-10	Labor	Roy Reed	ROYREE		3rd Year Apprentice		No		19146	Green Fire Hangingstone Operating Corporation	19146-016-0239	12	Hourly	8	4			
2019-10-10	Labor	Jeremy Herbin	JERHER	DIRECT_HIRE	2nd Year Apprentice		No		19146	Green Fire Hangingstone Operating Corporation	19146-016-0239	12	Hourly	8	4			
2019-10-10	Labor	Kyle Scott	KYLSKO	DIRECT_HIRE	Foreman - General		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0240	13	Hourly	8	5			
2019-10-10	Labor	Scott Patterson	SCOPAT	SUBCONTRACTOR	QA/QC Manager		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0240	12	Hourly	8	4			
2019-10-10	Labor	Danial Babchuk	DANBAB	SUBCONTRACTOR	Journeyman		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0240	12	Hourly	8	4			
2019-10-10	Labor	Zac Dunham	ZACDUN	DIRECT_HIRE	3rd Year Apprentice		No		19145	Green Fire Hangingstone Operating Corporation	19145-016-0240	12	Hourly	8	4			

2019-10-10	Labor	Lenny Rostotski	LENROS	DIRECT_HIRE	Welder w/Rig CWB or B-Pressure		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0240	12	Hourly	12	0				
2019-10-10	Labor	Cole Thompson	COLTHO	SUBCONTRACTOR	Journeyman		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0240	12	Hourly	8	4				
2019-10-10	Labor	Gerald Burd	GERBUR	DIRECT_HIRE	Equipment Operator - Principle		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0240	12	Hourly	8	4				
2019-10-10	Labor	Tyler Horner	TYLHOR	SUBCONTRACTOR	Journeyman		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0240	12	Hourly	8	4				
2019-10-10	Labor	Mick Antos	MICANT	DIRECT_HIRE	Journeyman		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0240	12	Hourly	8	4				
2019-10-10	Labor	Ashton Van	ASHVAN1	DIRECT_HIRE	2nd Year Apprentice		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0240	12	Hourly	8	4				
2019-10-10	Labor	Dylan Brown	DYLBRO1	DIRECT_HIRE	1st Year Apprentice		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0240	12	Hourly	8	4				
2019-10-10	Labor	Taylor Brown	TAYBRO	DIRECT_HIRE	2nd Year Apprentice		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0242	12	Hourly	8	4				
2019-10-10	Labor	Rick Dalgleish	RICDAL	SUBCONTRACTOR	Journeyman		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0242	12	Hourly	8	4				
2019-10-10	Labor	Will Bacon	WILBAC	DIRECT_HIRE	Journeyman		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0242	12	Hourly	8	4				
2019-10-10	Labor	Jordan Brenin	JORBRE	DIRECT_HIRE	Journeyman		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0242	12	Hourly	8	4				
2019-10-11	Labor	Clinton Casey	CLICAS	DIRECT_HIRE	Journeyman		No			19146	Green Fire Hangingstone Operating Corporation	19146-016-0241	12	Hourly	0	12				
2019-10-11	Labor	Roy Reed	ROYREE		3rd Year Apprentice		No			19146	Green Fire Hangingstone Operating Corporation	19146-016-0241	12	Hourly	0	12				
2019-10-11	Labor	Kyle Scott	KYLSCO	DIRECT_HIRE	Foreman - General		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0243	13	Hourly	0	13				
2019-10-11	Labor	Scott Patterson	SCOPAT	SUBCONTRACTOR	QA/QC Manager		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0243	12	Hourly	0	12				
2019-10-11	Labor	Danial Babchuk	DANIBAB	SUBCONTRACTOR	Journeyman		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0243	12	Hourly	0	12				
2019-10-11	Labor	Zac Dunham	ZACDUN	DIRECT_HIRE	3rd Year Apprentice		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0243	12	Hourly	0	12				
2019-10-11	Labor	Lenny Rostotski	LENROS	DIRECT_HIRE	Welder		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0243	12	Hourly	12	0				
2019-10-11	Labor	Cole Thompson	COLTHO	SUBCONTRACTOR	Journeyman		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0243	12	Hourly	0	12				
2019-10-11	Labor	Gerald Burd	GERBUR	DIRECT_HIRE	Equipment Operator - Principle		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0243	12	Hourly	0	12				
2019-10-11	Labor	Tyler Horner	TYLHOR	SUBCONTRACTOR	Journeyman		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0243	12	Hourly	0	12				
2019-10-11	Labor	Jeremy Herbin	JERHER	DIRECT_HIRE	2nd Year Apprentice		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0243	12	Hourly	0	12				
2019-10-11	Labor	Mick Antos	MICANT	DIRECT_HIRE	Journeyman		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0243	12	Hourly	0	12				
2019-10-11	Labor	Ashton Van	ASHVAN1	DIRECT_HIRE	2nd Year Apprentice		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0243	12	Hourly	0	12				
2019-10-11	Labor	Dylan Brown	DYLBRO1	DIRECT_HIRE	1st Year Apprentice		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0243	12	Hourly	0	12				
2019-10-11	Labor	Taylor Brown	TAYBRO	DIRECT_HIRE	2nd Year Apprentice		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0246	12	Hourly	0	12				
2019-10-11	Labor	Rick Dalgleish	RICDAL	SUBCONTRACTOR	Journeyman		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0246	12	Hourly	0	12				
2019-10-11	Labor	Will Bacon	WILBAC	DIRECT_HIRE	Journeyman		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0246	12	Hourly	0	12				
2019-10-11	Labor	Jordan Brenin	JORBRE	DIRECT_HIRE	Journeyman		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0246	12	Hourly	0	12				
2019-10-12	Labor	Clinton Casey	CLICAS	DIRECT_HIRE	Journeyman		No			19146	Green Fire Hangingstone Operating Corporation	19146-016-0244	12	Hourly	0	12				
2019-10-12	Labor	Jeremy Herbin	JERHER	DIRECT_HIRE	2nd Year Apprentice		No			19146	Green Fire Hangingstone Operating Corporation	19146-016-0244	8	Hourly	0	8				
2019-10-12	Labor	Kyle Scott	KYLSCO	DIRECT_HIRE	Foreman - General		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0245	13	Hourly	0	13				
2019-10-12	Labor	Scott Patterson	SCOPAT	SUBCONTRACTOR	QA/QC Manager		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0245	12	Hourly	0	12				
2019-10-12	Labor	Ashton Van	ASHVAN1	DIRECT_HIRE	2nd Year Apprentice		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0245	7	Hourly	0	7			travel home	
2019-10-12	Labor	Zac Dunham	ZACDUN	DIRECT_HIRE	3rd Year Apprentice		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0245	12	Hourly	0	12				
2019-10-12	Labor	Lenny Rostotski	LENROS	DIRECT_HIRE	Welder w/Rig CWB or B-Pressure		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0245	7	Hourly	0	7			travel home	
2019-10-12	Labor	Cole Thompson	COLTHO	SUBCONTRACTOR	Journeyman		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0245	12	Hourly	0	12				
2019-10-12	Labor	Gerald Burd	GERBUR	DIRECT_HIRE	Equipment Operator - Principle		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0245	9	Hourly	0	9			travel home	

2019-10-12	Labor	Tyler Horner	TYLHOR	SUBCONTRACTOR	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0245	12	Hourly	0	12				
2019-10-12	Labor	Mick Antos	MICANT	DIRECT_HIRE	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0245	12	Hourly	0	12				
2019-10-12	Labor	Daniel Babchuk	DANBAB	SUBCONTRACTOR	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0245	12	Hourly	0	12				
2019-10-12	Labor	Dylan Brown	DYLBRO1	DIRECT_HIRE	1st Year Apprentice	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0245	12	Hourly	0	12				
2019-10-12	Labor	Roy Reed	ROYREE		3rd Year Apprentice	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0245	12	Hourly	0	12				
2019-10-12	Labor	Taylor Brown	TAYBRO	DIRECT_HIRE	2nd Year Apprentice	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0250	12	Hourly	0	12				
2019-10-12	Labor	Rick Dalgleish	RICDAL	SUBCONTRACTOR	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0250	12	Hourly	0	12				
2019-10-12	Labor	Will Bacon	WILBAC	DIRECT_HIRE	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0250	12	Hourly	0	12				
2019-10-13	Labor	Taylor Brown	TAYBRO	DIRECT_HIRE	2nd Year Apprentice	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0252	12	Hourly	8	4				
2019-10-13	Labor	Rick Dalgleish	RICDAL	SUBCONTRACTOR	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0252	12	Hourly	8	4				
2019-10-13	Labor	Will Bacon	WILBAC	DIRECT_HIRE	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0252	12	Hourly	8	4				
2019-10-13	Labor	Kyle Scott	KYLSCO	DIRECT_HIRE	Foreman - General	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0251	13	Hourly	8	5				
2019-10-13	Labor	Scott Patterson	SCOPAT	SUBCONTRACTOR	QA/QC Manager	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0251	12	Hourly	5	7				
2019-10-13	Labor	Zac Dunham	ZACDUN	DIRECT_HIRE	3rd Year Apprentice	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0251	12	Hourly	8	4				
2019-10-13	Labor	Cole Thompson	COLTHO	SUBCONTRACTOR	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0251	12	Hourly	8	4				
2019-10-13	Labor	Tyler Horner	TYLHOR	SUBCONTRACTOR	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0251	8	Hourly	8	0				
2019-10-13	Labor	Mick Antos	MICANT	DIRECT_HIRE	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0251	12	Hourly	8	4				
2019-10-13	Labor	Daniel Babchuk	DANBAB	SUBCONTRACTOR	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0251	8	Hourly	8	0				
2019-10-14	Labor	Kyle Scott	KYLSCO	DIRECT_HIRE	Foreman - General	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0253	12	Hourly	0	12				
2019-10-14	Labor	Zac Dunham	ZACDUN	DIRECT_HIRE	3rd Year Apprentice	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0253	12	Hourly	0	12				
2019-10-14	Labor	Cole Thompson	COLTHO	SUBCONTRACTOR	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0253	12	Hourly	0	12				
2019-10-14	Labor	Mick Antos	MICANT	DIRECT_HIRE	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0253	12	Hourly	0	12				
2019-10-15	Labor	Kyle Scott	KYLSCO	DIRECT_HIRE	Foreman - General	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0256	8	Hourly	6	0				
2019-10-15	Labor	Zac Dunham	ZACDUN	DIRECT_HIRE	3rd Year Apprentice	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0256	5	Hourly	5	0				
2019-10-15	Labor	Cole Thompson	COLTHO	SUBCONTRACTOR	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0256	5	Hourly	5	0				
2019-10-21	Labor	Zac Dunham	ZACDUN	DIRECT_HIRE	3rd Year Apprentice	No			19169	Green Fire Hangingstone Operating Corporation	19169-016-0261	5	Hourly	5	0				
2019-10-21	Labor	Julian Madigan	JULMAD		Welder w/Rig CWB or B-Pressure	No			19169	Green Fire Hangingstone Operating Corporation	19169-016-0261	2	Hourly	2	0				
2019-10-21	Labor	Kyle Scott	KYLSCO	DIRECT_HIRE	Foreman - General	No			19169	Green Fire Hangingstone Operating Corporation	19169-016-0261	1	Hourly	1	0				
2019-10-24	Labor	Daniel Babchuk	DANBAB	SUBCONTRACTOR	Journeyman	No			19170	Green Fire Hangingstone Operating Corporation	19170-016-0262	12	Hourly	8	4				
2019-10-24	Labor	Caleb Sonnenberg	CALS0N	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure	No			19170	Green Fire Hangingstone Operating Corporation	19170-016-0262	12	Hourly	12	0				
2019-10-24	Labor	Kyle Scott	KYLSCO	DIRECT_HIRE	Project Manager	No			19170	Green Fire Hangingstone Operating Corporation	19170-016-0262	4	Hourly	4	0				
2019-10-25	Labor	Zac Dunham	ZACDUN	DIRECT_HIRE	3rd Year Apprentice	No			19170	Green Fire Hangingstone Operating Corporation	19170-016-0263	4	Hourly	4	0				
2019-10-29	Labor	Daniel Babchuk	DANBAB	SUBCONTRACTOR	Journeyman	No			19170	Green Fire Hangingstone Operating Corporation	19170-016-0264	7	Hourly	7	0				
2019-10-29	Labor	Scott Patterson	SCOPAT	SUBCONTRACTOR	QA/QC Manager	No			19170	Green Fire Hangingstone Operating Corporation	19170-016-0264	5	Hourly	5	0				
2019-10-31	Labor	Freddy Smith	FRESMI	DIRECT_HIRE	Truck Driver	No			19170	Green Fire Hangingstone Operating Corporation	19170-016-0265	1	Hourly	1	0				
2019-10-31	Labor	Scott Patterson	SCOPAT	SUBCONTRACTOR	QA/QC Manager	No			19170	Green Fire Hangingstone Operating Corporation	19170-016-0265	6	Hourly	6	0				
2019-10-31	Labor	Daniel Babchuk	DANBAB	SUBCONTRACTOR	Journeyman	No			19170	Green Fire Hangingstone Operating Corporation	19170-016-0265	2	Hourly	2	0				
2019-11-15	Labor	Carman Auger	CAMAUG	DIRECT_HIRE	Foreman - General	No			19190	Green Fire Hangingstone Operating Corporation	19190-016-0266	5	Hourly	5	0				





2019-11-22	Labor	Colton Koch	COLKOC	DIRECT_HIRE	Journeyman		No			19190	Green Fire Hangingstone Operating Corporation	19190-016-0278	12	Hourly	0	12			
2019-11-22	Labor	Leif Aitken	LEIAIT	DIRECT_HIRE	1st Year Apprentice		No			19190	Green Fire Hangingstone Operating Corporation	19190-016-0278	12	Hourly	0	12			
2019-11-22	Labor	Travis Anderson	TRAAND	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure		No			19190	Green Fire Hangingstone Operating Corporation	19190-016-0278	12	Hourly	12	0			
2019-11-23	Labor	Carman Auger	CAMAUG	DIRECT_HIRE	Foreman - General		No			19190	Green Fire Hangingstone Operating Corporation	19190-016-0279	3	Hourly	0	3			
2019-11-23	Labor	Colton Koch	COLKOC	DIRECT_HIRE	Journeyman		No			19190	Green Fire Hangingstone Operating Corporation	19190-016-0279	1	Hourly	0	1			
2020-01-21	Labor	Kyle Scott	KYLSKO	DIRECT_HIRE	Superintendent	1.2. Site Supervision	No			20015	Green Fire Hangingstone Operating Corporation	20015-015-0163	5	Hourly	5	0			
2020-01-21	Labor	Cole Moore	COLMOO	DIRECT_HIRE	Journeyman	2.1. Direct Labour	No			20015	Green Fire Hangingstone Operating Corporation	20015-015-0163	8	Hourly	8	0			
2020-01-21	Labor	Kyle Romanuk	KYLROM	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure	2.2. B Pressure Welding	No			20015	Green Fire Hangingstone Operating Corporation	20015-015-0163	8	Hourly	8	0			
2020-01-22	Labor	Colton Koch	COLKOC	DIRECT_HIRE	Journeyman	2.1. Direct Labour	No			20015	Green Fire Hangingstone Operating Corporation	20015-015-0164	3	Hourly	3	0			
2020-01-23	Labor	Kyle Scott	KYLSKO	DIRECT_HIRE	Superintendent	1.2. Site Supervision	No			20015	Green Fire Hangingstone Operating Corporation	20015-015-0165	2	Hourly	2	0			
2020-01-23	Labor	Colton Koch	COLKOC	DIRECT_HIRE	Journeyman	2.1. Direct Labour	No			20015	Green Fire Hangingstone Operating Corporation	20015-015-0165	8	Hourly	8	0			
2019-09-05	Travel	Kyle Scott	KYLSKO	DIRECT_HIRE	Foreman - General		No			19119	Green Fire Hangingstone Operating Corporation	19119-016-0173	7	Hourly			7		
2019-09-05	Travel	Zac Dunham	ZACDUN	DIRECT_HIRE	3rd Year Apprentice		No			19119	Green Fire Hangingstone Operating Corporation	19119-016-0173	7	Hourly			7		
2019-09-05	Travel	Jon Hantley	JONHEA	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure		No			19119	Green Fire Hangingstone Operating Corporation	19119-016-0173	7	Hourly			7		
2019-09-05	Travel	Dirk Lundy	DIRLUN	DIRECT_HIRE	3rd Year Apprentice		No			19119	Green Fire Hangingstone Operating Corporation	19119-016-0173	7	Hourly			7		
2019-09-06	Travel	Zac Dunham	ZACDUN	DIRECT_HIRE	3rd Year Apprentice		No			19119	Green Fire Hangingstone Operating Corporation	19119-016-0176	8	Hourly			8		
2019-09-11	Travel	Kyle Scott	KYLSKO	DIRECT_HIRE	Foreman - General		No			19119	Green Fire Hangingstone Operating Corporation	19119-016-0182	7	Hourly			7		
2019-09-11	Travel	Jon Hantley	JONHEA	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure		No			19119	Green Fire Hangingstone Operating Corporation	19119-016-0182	7	Hourly			7		
2019-09-11	Travel	Zac Dunham	ZACDUN	DIRECT_HIRE	3rd Year Apprentice		No			19119	Green Fire Hangingstone Operating Corporation	19119-016-0182	7	Hourly			7		
2019-09-11	Travel	Dirk Lundy	DIRLUN	DIRECT_HIRE	3rd Year Apprentice		No			19119	Green Fire Hangingstone Operating Corporation	19119-016-0182	7	Hourly			7		
2019-09-27	Travel	Kyle Scott	KYLSKO	DIRECT_HIRE	Foreman - General		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0201	7	Hourly			7		
2019-09-27	Travel	Scott Patterson	SCOPAT	SUBCONTRACTOR	QA/QC Manager		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0201	7	Hourly			7		
2019-09-27	Travel	Zac Dunham	ZACDUN	DIRECT_HIRE	3rd Year Apprentice		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0201	7	Hourly			7		
2019-09-27	Travel	Lenny Rostotski	LENROS	DIRECT_HIRE	Welder w/Rig CWB or B-Pressure		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0201	7	Hourly			7		
2019-09-27	Travel	Cole Thompson	COLTHO	SUBCONTRACTOR	Journeyman		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0201	4	Hourly			4		
2019-09-27	Travel	Gerald Burd	GERBUR	DIRECT_HIRE	Equipment Operator - Principle		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0201	5	Hourly			5		
2019-09-27	Travel	Tyler Horner	TYLHOR	SUBCONTRACTOR	Journeyman		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0201	6	Hourly			6		
2019-09-27	Travel	Jeremy Herbin	JERHER	DIRECT_HIRE	2nd Year Apprentice		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0201	5	Hourly			5		
2019-09-27	Travel	Mick Antos	MICANT	DIRECT_HIRE	Journeyman		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0201	6	Hourly			6		
2019-09-27	Travel	Clinton Casey	CUCAS	DIRECT_HIRE	Journeyman		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0201	6	Hourly			6		
2019-09-27	Travel	Dylan Brown	DYLBRO1	DIRECT_HIRE	1st Year Apprentice		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0201	6	Hourly			6		
2019-09-27	Travel	Taylor Brown	TAYBRO	DIRECT_HIRE	2nd Year Apprentice		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0201	6	Hourly			6		
2019-09-27	Travel	Rick Dalgleish	RICDAL	SUBCONTRACTOR	Journeyman		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0201	7	Hourly			7		
2019-09-27	Travel	Will Bacon	WILBAC	DIRECT_HIRE	Journeyman		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0201	7	Hourly			7		
2019-09-27	Travel	Jordan Brenin	JORBRE	DIRECT_HIRE	Journeyman		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0201	7	Hourly			7		
2019-09-28	Travel	Daniel Babchuk	DAMBAB	SUBCONTRACTOR	Journeyman		No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0202	7	Hourly			7		
2019-10-02	Travel	Roy Reed	ROYREE		3rd Year Apprentice		No			19146	Green Fire Hangingstone Operating Corporation	19146-016-0216	7	Hourly			7		
2019-10-12	Travel	Jeremy Herbin	JERHER	DIRECT_HIRE	2nd Year Apprentice		No			19146	Green Fire Hangingstone Operating Corporation	19146-016-0244	5	Hourly			5		

2019-10-12	Travel	Ashton Van	ASHVANI	DIRECT_HIRE	2nd Year Apprentice	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0245	7		Hourly			7	travel home	
2019-10-12	Travel	Lenny Rostolski	LENROS	DIRECT_HIRE	Welder w/Rig CWB or B-Pressure	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0245	7		Hourly			7	travel home	
2019-10-12	Travel	Gerald Burd	GERBUR	DIRECT_HIRE	Equipment Operator - Principle	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0245	5		Hourly			5	travel home	
2019-10-12	Travel	Jordan Breenin	JORBRE	DIRECT_HIRE	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0245	7		Hourly			7	travel home	
2019-10-13	Travel	Tyler Horner	TYLHOR	SUBCONTRACTOR	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0251	6		Hourly			6		
2019-10-13	Travel	Daniel Babchuk	DANBAB	SUBCONTRACTOR	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0251	6		Hourly			6		
2019-10-13	Travel	Clifton Casey	CLJCAS	DIRECT_HIRE	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0251	6		Hourly			6		
2019-10-13	Travel	Dylan Brown	DYLBRO1	DIRECT_HIRE	1st Year Apprentice	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0251	6		Hourly			6		
2019-10-13	Travel	Roy Reed	ROYREE		3rd Year Apprentice	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0251	6		Hourly			6		
2019-10-14	Travel	Taylor Brown	TAYBRO	DIRECT_HIRE	2nd Year Apprentice	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0253	6		Hourly			6		
2019-10-14	Travel	Rick Dalgleish	RICDAL	SUBCONTRACTOR	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0253	7		Hourly			7		
2019-10-14	Travel	Will Bacon	WILBAC	DIRECT_HIRE	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0253	7		Hourly			7		
2019-10-15	Travel	Kyle Scott	KYLSCO	DIRECT_HIRE	Foreman - General	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0256	7		Hourly			7		
2019-10-15	Travel	Zac Dunham	ZACDUN	DIRECT_HIRE	3rd Year Apprentice	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0256	7		Hourly			7		
2019-10-15	Travel	Cole Thompson	COLTHO	SUBCONTRACTOR	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0256	5		Hourly			5		
2019-10-15	Travel	Mick Antos	MICANT	DIRECT_HIRE	Journeyman	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0256	6		Hourly			6		
2019-10-15	Travel	Freddy Smith	FRESMI	DIRECT_HIRE	Truck Driver	No			19145	Green Fire Hangingstone Operating Corporation	19145-016-0256	0		Hourly			18		
2019-10-31	Travel	Freddy Smith	FRESMI	DIRECT_HIRE	Truck Driver	No			19170	Green Fire Hangingstone Operating Corporation	19170-016-0265	14		Hourly			14		
2019-11-15	Travel	Carman Auger	CAMAUG	DIRECT_HIRE	Foreman - General	No			19190	Green Fire Hangingstone Operating Corporation	19190-016-0266	7		Hourly			7		
2019-11-15	Travel	Colton Koch	COLKOC	DIRECT_HIRE	Journeyman	No			19190	Green Fire Hangingstone Operating Corporation	19190-016-0266	7		Hourly			7		
2019-11-15	Travel	Leif Aitken	LEIAIT	DIRECT_HIRE	1st Year Apprentice	No			19190	Green Fire Hangingstone Operating Corporation	19190-016-0266	7		Hourly			7		
2019-11-23	Travel	Carman Auger	CAMAUG	DIRECT_HIRE	Foreman - General	No			19190	Green Fire Hangingstone Operating Corporation	19190-016-0279	7		Hourly			7		
2019-11-23	Travel	Colton Koch	COLKOC	DIRECT_HIRE	Journeyman	No			19190	Green Fire Hangingstone Operating Corporation	19190-016-0279	7		Hourly			7		
2019-11-23	Travel	Leif Aitken	LEIAIT	DIRECT_HIRE	1st Year Apprentice	No			19190	Green Fire Hangingstone Operating Corporation	19190-016-0279	7		Hourly			7		
2019-11-23	Travel	Travis Anderson	TRAAND	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure	No			19190	Green Fire Hangingstone Operating Corporation	19190-016-0279	11		Hourly			11		
2020-01-24	Travel	Colton Koch	COLKOC	DIRECT_HIRE	Journeyman	4.1. Direct Labour	No		20015	Green Fire Hangingstone Operating Corporation	20015-015-0166	13		Hourly			13		
2020-01-30	Labor	Kyle Scott	KYLSCO	DIRECT_HIRE	Superintendent	1.2. Site Supervision	No		20021	Greenfire Hangingstone	20021-015-0169	3		Hourly	3	0			
2020-01-30	Labor	Cole Moore	COLMOO	DIRECT_HIRE	Journeyman	2.1. Direct Labour	No		20021	Greenfire Hangingstone	20021-015-0169	5		Hourly	5	0			
2020-01-30	Labor	Jeff Smith	JEFSMI	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure	2.2. B Pressure Welding	No		20021	Greenfire Hangingstone	20021-015-0169	5		Hourly	5	0			
2020-01-31	Labor	Kyle Scott	KYLSCO	DIRECT_HIRE	Superintendent	1.2. Site Supervision	No		20021	Greenfire Hangingstone	20021-015-0170	3		Hourly	3	0			
2020-01-31	Labor	Cole Moore	COLMOO	DIRECT_HIRE	Journeyman	2.1. Direct Labour	No		20021	Greenfire Hangingstone	20021-015-0170	8		Hourly	8	0			
2020-01-31	Labor	Jeff Smith	JEFSMI	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure	2.2. B Pressure Welding	No		20021	Greenfire Hangingstone	20021-015-0170	8		Hourly	8	0			
2020-02-03	Labor	Jeff Smith	JEFSMI	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure		No		20021	Greenfire Hangingstone	20021-015-0172	8		Hourly	8	0			
2020-02-03	Labor	Colton Koch	COLKOC	DIRECT_HIRE	Journeyman		No		20021	Greenfire Hangingstone	20021-015-0172	8		Hourly	8	0			
2020-02-04	Labor	Cole Moore	COLMOO	DIRECT_HIRE	Journeyman		No		20021	Greenfire Hangingstone	20021-015-0173	2		Hourly	2	0			
2020-02-05	Labor	Cole Moore	COLMOO	DIRECT_HIRE	Journeyman		No		20021	Greenfire Hangingstone	20021-015-0174	5		Hourly	5	0			
2020-02-05	Labor	Kyle Scott	KYLSCO	DIRECT_HIRE	Superintendent		No		20021	Greenfire Hangingstone	20021-015-0174	3		Hourly	3	0			
2020-02-25	Labor	Kyle Scott	KYLSCO	DIRECT_HIRE	Superintendent	1.2. Site Supervision	No		20038	Greenfire Hangingstone	20038-047-0015	3		Hourly	3	0			
2020-02-25	Labor	Ashley Smith	ASHSMI	DIRECT_HIRE	2nd Year Apprentice	2.6. Operators/Shop Support Labour	No		20038	Greenfire Hangingstone	20038-047-0015	6		Hourly	6	0			
2020-02-25	Labor	Kyle Romanuk	KYLROM	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure	2.2. B Pressure Welding	No		20038	Greenfire Hangingstone	20038-047-0015	4		Hourly	4	0			
2020-02-25	Labor	Steve Dageford	STEDAG	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure	2.2. B Pressure Welding	No		20038	Greenfire Hangingstone	20038-047-0015	2		Hourly	2	0			
2020-02-26	Labor	Kyle Scott	KYLSCO	DIRECT_HIRE	Superintendent	1.2. Site Supervision	No		20038	Greenfire Hangingstone	20038-047-0016	2		Hourly	2	0			
2020-02-26	Labor	Ashley Smith	ASHSMI	DIRECT_HIRE	2nd Year Apprentice	2.6. Operators/Shop Support Labour	No		20038	Greenfire Hangingstone	20038-047-0016	10		Hourly	8	2			
2020-02-26	Labor	Kyle Romanuk	KYLROM	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure	2.2. B Pressure Welding	No		20038	Greenfire Hangingstone	20038-047-0016	10		Hourly	10	0			
2020-02-26	Labor	Steve Dageford	STEDAG	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure	2.2. B Pressure Welding	No		20038	Greenfire Hangingstone	20038-047-0016	4		Hourly	4	0			

2020-02-27	Labor	Kyle Romaniuk	KYLROM	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure	2.2. B Pressure Welding	No				20038	Greentire Hangingstone	20038-047-0017	6	Hourly	6	0			
2020-02-27	Labor	Cole Moore	COLMOO	DIRECT_HIRE	Journeyman	2.3. Hydrotest	No				20038	Greentire Hangingstone	20038-047-0017	4	Hourly	4	0			
2020-02-27	Labor	Ashley Smith	ASHSMI	DIRECT_HIRE	2nd Year Apprentice	2.3. Hydrotest	No				20038	Greentire Hangingstone	20038-047-0017	8	Hourly	8	0			
2020-02-27	Labor	Kyle Scott	KYLSCO	DIRECT_HIRE	Superintendent	1.2. Site Supervision	No				20038	Greentire Hangingstone	20038-047-0017	2	Hourly	2	0			
2020-02-28	Labor	Ashley Smith	ASHSMI	DIRECT_HIRE	2nd Year Apprentice	2.3. Hydrotest	No				20038	Greentire Hangingstone	20038-047-0020	10	Hourly	8	2			
2020-02-28	Labor	Liam Fagan	LIAFAG	DIRECT_HIRE	Labourer - Skilled	2.3. Hydrotest	No				20038	Greentire Hangingstone	20038-047-0020	10	Hourly	8	2			
2020-02-28	Labor	Kyle Scott	KYLSCO	DIRECT_HIRE	Superintendent	1.2. Site Supervision	No				20038	Greentire Hangingstone	20038-047-0020	2	Hourly	2	0			
2020-03-02	Labor	Dalton Clews	DALCLE	DIRECT_HIRE	Journeyman		No				20041	Greentire Hangingstone	20041-029-0108	9	Hourly	8	1			
2020-03-02	Labor	Ashley Smith	ASHSMI	DIRECT_HIRE	2nd Year Apprentice		No				20041	Greentire Hangingstone	20041-029-0108	7	Hourly	7	0			
2020-03-02	Labor	Travis Anderson	TRAAND	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure	4.2. B Pressure Welding	No				20041	Greentire Hangingstone	20041-029-0108	5	Hourly	5	0			
2020-03-03	Labor	Dalton Clews	DALCLE	DIRECT_HIRE	Journeyman		No				20041	Greentire Hangingstone	20041-029-0109	12	Hourly	8	4			
2020-03-03	Labor	Cole Moore	COLMOO	DIRECT_HIRE	Journeyman		No				20041	Greentire Hangingstone	20041-029-0109	12	Hourly	8	4			
2020-03-03	Labor	Jeremy Zavalykut	JERZAW	DIRECT_HIRE	Journeyman		No				20041	Greentire Hangingstone	20041-029-0109	12	Hourly	8	4			
2020-03-03	Labor	Ashley Smith	ASHSMI	DIRECT_HIRE	2nd Year Apprentice		No				20041	Greentire Hangingstone	20041-029-0109	12	Hourly	8	4			
2020-03-03	Labor	Kyle Romaniuk	KYLROM	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure		No				20041	Greentire Hangingstone	20041-029-0109	12	Hourly	8	4			
2020-03-03	Labor	Jon Heartley	JONHEA	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure		No				20041	Greentire Hangingstone	20041-029-0109	5	Hourly	5	0			
2020-03-03	Labor	Steve Dageford	STEDAG	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure		No				20041	Greentire Hangingstone	20041-029-0109	12	Hourly	8	4			
2020-03-03	Labor	Travis Anderson	TRAAND	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure	4.2. B Pressure Welding	No				20041	Greentire Hangingstone	20041-029-0109	10	Hourly	10	0			
2020-03-03	Labor	Kevin Prince	KEVPRI	DIRECT_HIRE	Labourer - General		No				20041	Greentire Hangingstone	20041-029-0109	2	Hourly	2	0			
2020-03-04	Labor	Dalton Clews	DALCLE	DIRECT_HIRE	Journeyman		No				20041	Greentire Hangingstone	20041-029-0110	12	Hourly	8	4			
2020-03-04	Labor	Ashley Smith	ASHSMI	DIRECT_HIRE	2nd Year Apprentice		No				20041	Greentire Hangingstone	20041-029-0110	12	Hourly	8	4			
2020-03-04	Labor	Liam Fagan	LIAFAG	DIRECT_HIRE	Labourer - Skilled		No				20041	Greentire Hangingstone	20041-029-0110	12	Hourly	8	4			
2020-03-04	Labor	Colton Koch	COLKOC	DIRECT_HIRE	Welder w/Rig CWB or B-Pressure		No				20041	Greentire Hangingstone	20041-029-0110	4	Hourly	4	0			
2020-03-04	Labor	Kevin Prince	KEVPRI	DIRECT_HIRE	Labourer - General		No				20041	Greentire Hangingstone	20041-029-0110	7	Hourly	7	0			
2020-03-04	Labor	Morgan Kirton	MORKIR	DIRECT_HIRE	Equipment Operator - Principle II		No				20041	Greentire Hangingstone	20041-029-0110	2	Hourly	2	0			
2020-03-04	Labor	Steve Dageford	STEDAG	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure		No				20041	Greentire Hangingstone	20041-029-0110	12	Hourly	8	4			
2020-03-04	Labor	Jon Heartley	JONHEA	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure		No				20041	Greentire Hangingstone	20041-029-0110	12	Hourly	8	4			
2020-03-04	Labor	Jonathon Fripp	JOHFRI	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure		No				20041	Greentire Hangingstone	20041-029-0110	12	Hourly	8	4			
2020-03-04	Labor	Lance Clough	LANCLO	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure		No				20041	Greentire Hangingstone	20041-029-0110	12	Hourly	8	4			
2020-03-04	Labor	Kyle Romaniuk	KYLROM	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure		No				20041	Greentire Hangingstone	20041-029-0110	12	Hourly	8	4			
2020-03-04	Labor	Travis Anderson	TRAAND	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure	4.2. B Pressure Welding	No				20041	Greentire Hangingstone	20041-029-0110	10	Hourly	8	2			
2020-03-05	Labor	Steve Dageford	STEDAG	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure		No				20041	Greentire Hangingstone	20041-038-0040	10	Hourly	8	2			
2020-03-05	Labor	Kyle Romaniuk	KYLROM	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure		No				20041	Greentire Hangingstone	20041-038-0040	10	Hourly	8	2			
2020-03-05	Labor	Jon Heartley	JONHEA	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure		No				20041	Greentire Hangingstone	20041-038-0040	10	Hourly	8	2			
2020-03-05	Labor	Jonathon Fripp	JOHFRI	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure		No				20041	Greentire Hangingstone	20041-038-0040	10	Hourly	8	2			
2020-03-05	Labor	Troy Somers	TROSOM	SUBCONTRACTOR	Foreman - General		No				20041	Greentire Hangingstone	20041-038-0040	10.5	Hourly	9	1.5			
2020-03-05	Labor	Lance Clough	LANCLO	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure		No				20041	Greentire Hangingstone	20041-038-0040	10	Hourly	8	2			
2020-03-05	Labor	Liam Fagan	LIAFAG	DIRECT_HIRE	Labourer - Skilled		No				20041	Greentire Hangingstone	20041-038-0040	7	Hourly	7	0			
2020-03-05	Labor	Mike Vince	MIKVIN	DIRECT_HIRE	Journeyman		No				20041	Greentire Hangingstone	20041-038-0040	10.5	Hourly	8	2.5			
2020-03-05	Labor	Nate Bobroska	NATBOB	DIRECT_HIRE	Welder w/Rig CWB or B-Pressure		No				20041	Greentire Hangingstone	20041-038-0040	10.5	Hourly	8	2.5			
2020-03-05	Labor	Andrew Silberer	ANDSIL	DIRECT_HIRE	Project Manager		No				20041	Greentire Hangingstone	20041-038-0040	8	Hourly	8	0			
2020-03-05	Labor	Travis Anderson	TRAAND	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure	4.2. B Pressure Welding	No				20041	Greentire Hangingstone	20041-038-0040	11	Hourly	12	0			
2020-03-06	Labor	Steve Dageford	STEDAG	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure		No				20041	Greentire Hangingstone	20041-038-0042	10	Hourly	8	2			
2020-03-06	Labor	Kyle Romaniuk	KYLROM	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure		No				20041	Greentire Hangingstone	20041-038-0042	10	Hourly	8	2			
2020-03-06	Labor	Jon Heartley	JONHEA	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure		No				20041	Greentire Hangingstone	20041-038-0042	10	Hourly	8	2			
2020-03-06	Labor	Jonathon Fripp	JOHFRI	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure		No				20041	Greentire Hangingstone	20041-038-0042	9	Hourly	9	0			
2020-03-06	Labor	Ashley Smith	ASHSMI	DIRECT_HIRE	2nd Year Apprentice		No				20041	Greentire Hangingstone	20041-038-0042	10	Hourly	8	2			
2020-03-06	Labor	Kevin Prince	KEVPRI	DIRECT_HIRE	Labourer - General		No				20041	Greentire Hangingstone	20041-038-0042	10	Hourly	8	2			
2020-03-06	Labor	Troy Somers	TROSOM	SUBCONTRACTOR	Foreman - General		No				20041	Greentire Hangingstone	20041-038-0042	10	Hourly	8	2			
2020-03-06	Labor	Lance Clough	LANCLO	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure		No				20041	Greentire Hangingstone	20041-038-0042	10	Hourly	8	2			
2020-03-06	Labor	Mike Vince	MIKVIN	DIRECT_HIRE	Journeyman		No				20041	Greentire Hangingstone	20041-038-0042	10.5	Hourly	8	2.5			
2020-03-06	Labor	Nate Bobroska	NATBOB	DIRECT_HIRE	Welder w/Rig CWB or B-Pressure		No				20041	Greentire Hangingstone	20041-038-0042	10.5	Hourly	8	2.5			
2020-03-06	Labor	Andrew Silberer	ANDSIL	DIRECT_HIRE	Project Manager		No				20041	Greentire Hangingstone	20041-038-0042	8	Hourly	8	0			
2020-03-06	Labor	Travis Anderson	TRAAND	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure	4.2. B Pressure Welding	No				20041	Greentire Hangingstone	20041-038-0042	5	Hourly	5	0			
2020-03-07	Labor	Andrew Silberer	ANDSIL	DIRECT_HIRE	Project Manager		No				20041	Greentire Hangingstone	20041-000-0001	2	Hourly	0	2			
2020-03-07	Labor	Mike Vince	MIKVIN	DIRECT_HIRE	Journeyman		No				20041	Greentire Hangingstone	20041-000-0001	10.5	Hourly	0	10.5			
2020-03-07	Labor	Nate Bobroska	NATBOB	DIRECT_HIRE	Welder w/Rig CWB or B-Pressure		No				20041	Greentire Hangingstone	20041-000-0001	10.5	Hourly	0	10.5			
2020-03-08	Labor	Jonathon Fripp	JOHFRI	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure		No				20041	Greentire Hangingstone	20041-038-0041	8	Hourly	8	0			
2020-03-09	Labor	Ashley Smith	ASHSMI	DIRECT_HIRE	2nd Year Apprentice		No				20041	Greentire Hangingstone	20041-038-0041	8	Hourly	8	0			
2020-03-09	Labor	Kevin Prince	KEVPRI	DIRECT_HIRE	Labourer - General		No				20041	Greentire Hangingstone	20041-038-0041	8	Hourly	8	0			
2020-03-09	Labor	Troy Somers	TROSOM	SUBCONTRACTOR	Foreman - General		No				20041	Greentire Hangingstone	20041-038-0041	8	Hourly	8	0			

2020-03-09	Labor	Lance Clough	LANCLO	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure	No		20041	Greenfire Hangingstone	20041-038-0041	8	Hourly	8	0				
2020-03-09	Labor	Liam Fagan	LIAFAG	DIRECT_HIRE	Labourer - Skilled	No		20041	Greenfire Hangingstone	20041-038-0041	8	Hourly	8	0				
2020-03-09	Labor	Aish Vallee	ALAVAL	DIRECT_HIRE	Labourer - General	No		20041	Greenfire Hangingstone	20041-038-0041	8	Hourly	8	0				
2020-03-09	Labor	Travis Anderson	TRAAND	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure	2.2. B Pressure Welding	No		20041	Greenfire Hangingstone	20041-038-0041	1	Hourly	1	0			
2020-03-10	Labor	Steve Dageford	STEDAG	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure		No		20041	Greenfire Hangingstone	20041-038-0043	4	Hourly	4	0			
2020-03-10	Labor	Kyle Romanuk	KYLROM	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure		No		20041	Greenfire Hangingstone	20041-038-0043	4	Hourly	4	0			
2020-03-10	Labor	Jonathon Fripp	JOHFRI	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure		No		20041	Greenfire Hangingstone	20041-038-0043	9	Hourly	8	1			
2020-03-10	Labor	Ashley Smith	ASHSMI	DIRECT_HIRE	2nd Year Apprentice		No		20041	Greenfire Hangingstone	20041-038-0043	9	Hourly	8	1			
2020-03-10	Labor	Kevin Prince	KEVPRI	DIRECT_HIRE	Labourer - General		No		20041	Greenfire Hangingstone	20041-038-0043	9	Hourly	8	1			
2020-03-10	Labor	Troy Somers	TROSOM	SUBCONTRACTOR	Foreman - General		No		20041	Greenfire Hangingstone	20041-038-0043	9	Hourly	8	1			
2020-03-10	Labor	Lance Clough	LANCLO	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure		No		20041	Greenfire Hangingstone	20041-038-0043	6	Hourly	6	0			
2020-03-10	Labor	Aish Vallee	ALAVAL	DIRECT_HIRE	Labourer - General		No		20041	Greenfire Hangingstone	20041-038-0043	4	Hourly	4	0			
2020-03-10	Labor	Liam Fagan	LIAFAG	DIRECT_HIRE	Labourer - Skilled		No		20041	Greenfire Hangingstone	20041-038-0043	4	Hourly	4	0			
2020-03-10	Labor	Andrew Silberer	ANDSIL	DIRECT_HIRE	Project Manager		No		20041	Greenfire Hangingstone	20041-038-0043	8	Hourly	8	0			
2020-03-11	Labor	Steve Dageford	STEDAG	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure		No		20041	Greenfire Hangingstone	20041-038-0044	10	Hourly	8	2			
2020-03-11	Labor	Kyle Romanuk	KYLROM	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure		No		20041	Greenfire Hangingstone	20041-038-0044	10	Hourly	8	2			
2020-03-11	Labor	Jonathon Fripp	JOHFRI	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure		No		20041	Greenfire Hangingstone	20041-038-0044	10	Hourly	8	2			
2020-03-11	Labor	Kevin Prince	KEVPRI	DIRECT_HIRE	Labourer - General		No		20041	Greenfire Hangingstone	20041-038-0044	10	Hourly	8	2			
2020-03-11	Labor	Troy Somers	TROSOM	SUBCONTRACTOR	Foreman - General		No		20041	Greenfire Hangingstone	20041-038-0044	10	Hourly	8	2			
2020-03-11	Labor	Andrew Silberer	ANDSIL	DIRECT_HIRE	Project Manager		No		20041	Greenfire Hangingstone	20041-038-0044	9	Hourly	8	0			
2020-03-12	Labor	Steve Dageford	STEDAG	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure		No		20041	Greenfire Hangingstone	20041-038-0045	4	Hourly	4	0			
2020-03-12	Labor	Kyle Romanuk	KYLROM	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure		No		20041	Greenfire Hangingstone	20041-038-0045	7	Hourly	7	0			
2020-03-12	Labor	Jonathon Fripp	JOHFRI	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure		No		20041	Greenfire Hangingstone	20041-038-0045	9	Hourly	8	1			
2020-03-12	Labor	Kevin Prince	KEVPRI	DIRECT_HIRE	Labourer - General		No		20041	Greenfire Hangingstone	20041-038-0045	7.5	Hourly	7.5	0			
2020-03-12	Labor	Troy Somers	TROSOM	SUBCONTRACTOR	Foreman - General		No		20041	Greenfire Hangingstone	20041-038-0045	7.5	Hourly	7.5	0			
2020-03-13	Labor	Kevin Prince	KEVPRI	DIRECT_HIRE	Labourer - General		No		20041	Greenfire Hangingstone	20041-038-0046	3	Hourly	3	0			
2020-03-13	Labor	Troy Somers	TROSOM	SUBCONTRACTOR	Foreman - General		No		20041	Greenfire Hangingstone	20041-038-0046	5	Hourly	5	0			
2020-02-06	Travel	Colton Koch	COLKOC	DIRECT_HIRE	Journeyman		No		20021	Greenfire Hangingstone	20021-015-0175	13	Hourly			13		
2020-03-02	Travel	Travis Anderson	TRAAND	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure	4.2. B Pressure Welding	No		20041	Greenfire Hangingstone	20041-029-0108	7	Hourly			7		
2020-03-06	Travel	Travis Anderson	TRAAND	SUBCONTRACTOR	Welder w/Rig CWB or B-Pressure	4.2. B Pressure Welding	No		20041	Greenfire Hangingstone	20041-038-0042	7	Hourly			7		
2020-03-11	Travel	Andrew Silberer	ANDSIL	DIRECT_HIRE	Project Manager		No		20041	Greenfire Hangingstone	20041-038-0044	1	Hourly			1		