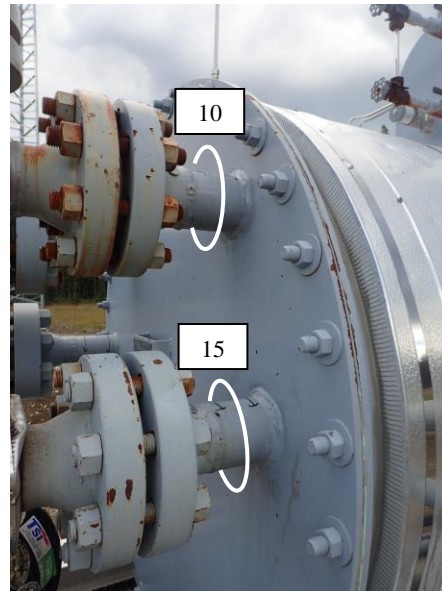
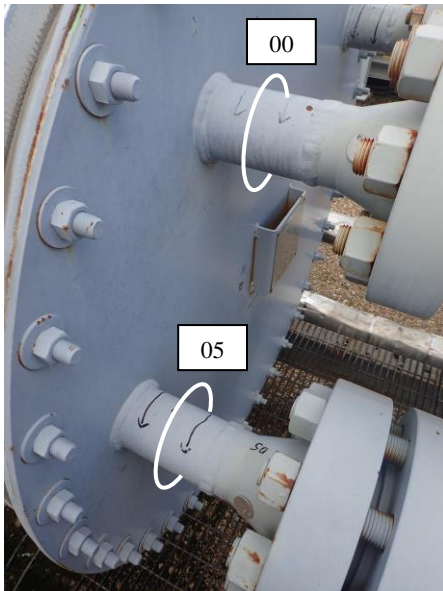




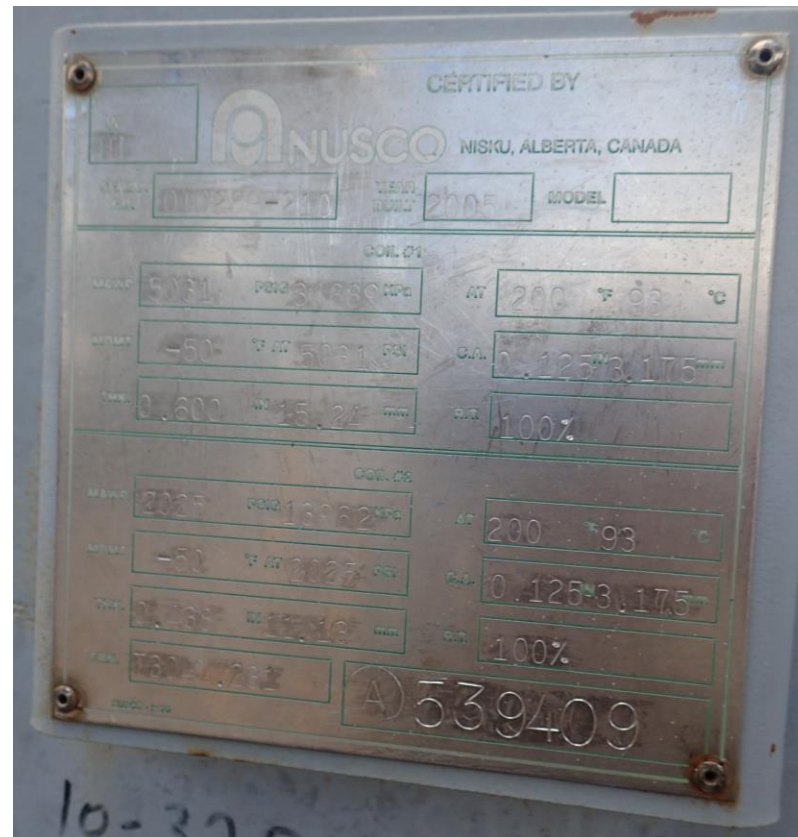


Vessel Static Data:

Name:	Line Heater
A#:	0539409
Serial Number:	010289-210
CRN:	T 3040.231
LSD:	10-32-046-16 W5M
Location:	North Blackstone
CA:	3.175mm
Size:	N/A
MAWP:	34689kPa / 13962kPa
Temp:	93°C
Head Material:	N/A
Head Nominal:	N/A
Shell Material:	N/A
Shell Nominal:	N/A
Year Built:	2005
Manufacturer:	Nusco
Tag#:	10-32BRA-1401



Notes:	
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ULTRASONIC CORROSION SURVEY

Survey Name: HUSKY ENERGY

Report No.: 900

Survey Date: 07/19/2016

LSD: 10-32-046-16W5 Dwg: 19 Vessel Number: A0539409 Manufacturer: NUSCO Technician: D. TUCKER
Downhole LSD: Vessel Name: LINE HEATER Serial Number: 010289-210 Certification: CGSB / SNT-TC-1A
District Unit: NORTH BLACKSTONE Year Built: 2005 Shell MAWP KPA: 34689 MAWT C: 93 UT I #17016
Location: FIELD Tag Number: 10-32BRA-1401 Tube MAWP KPA: 13962 MAWT C: 93
Unit Name: NORTH BLACKSTONE CRN: T 3040.231 Vessel CA: 3.1750

Band	Description		Baseline	Previous	Current	Next Inspection	Nominal	TMIN	ST Loss	LT Loss	Recommended
						Material	CA		MPY	MPY	Retirement
											Date
00	Nozzle	Ref	2013 14.9350	2013 14.9350	2016 15.0620	2017	15.2400	10.4364	0.0336	0.0336	2036
Shape	360° Circ	Min	14.7570	14.7570	14.6560	SA 106 - B	5.0800				
OD	88.9	Avg	15.2400	15.2400	15.1890						
Spec.	VIII Div 1					Comments:					
05	Nozzle	Ref	2013 16.5860	2013 16.5860	2016 15.4180	2017	15.2400	10.4364	0.0000	0.0000	2036
Shape	360° Circ	Min	15.0620	15.0620	15.0620	SA 106 - B	5.0800				
OD	88.9	Avg	15.5190	15.5190	15.5960						
Spec.	VIII Div 1					Comments:					
10	Nozzle	Ref	2013 11.3540	2013 11.3540	2016 11.5320	2017	11.1300	4.2476	0.0680	0.0680	2036
Shape	360° Circ	Min	11.1510	11.1510	10.9470	SA 106 - B	4.5663				
OD	88.9	Avg	11.4810	11.4810	11.3540						
Spec.	VIII Div 1					Comments:					
15	Nozzle	Ref	2013 11.2520	2013 11.2520	2016 11.0740	2017	11.1300	4.2476	0.0930	0.0930	2036
Shape	360° Circ	Min	11.1250	11.1250	10.8460	SA 106 - B	4.5663				
OD	88.9	Avg	11.5570	11.5570	11.1760						
Spec.	VIII Div 1					Comments:					



ULTRASONIC CORROSION SURVEY

Survey Name: HUSKY ENERGY

Report No.: 900

Survey Date: 07/19/2016

LSD: 10-32-046-16W5 Dwg: 19 Vessel Number: A0539409 Manufacturer: NUSCO Technician: D. TUCKER
Downhole LSD: Vessel Name: LINE HEATER Serial Number: 010289-210 Certification: CGSB / SNT-TC-1A
District Unit: NORTH BLACKSTONE Year Built: 2005 Shell MAWP KPA: 34689 MAWT C: 93 UT I #17016
Location: FIELD Tag Number: 10-32BRA-1401 Tube MAWP KPA: 13962 MAWT C: 93
Unit Name: NORTH BLACKSTONE CRN: T 3040.231 Vessel CA: 3.1750

Band	Description					Next Inspection			Nominal	TMIN	ST Loss	LT Loss	Recommended Retirement Date	
			Baseline	Previous	Current	Material	CA	MPY	MPY					
20	Piping	Ref	2013	7.7720	2013	7.7720	2016	7.2640	2017	7.6200	4.2837	0.1013	0.1013	2036
Shape	90° Elbow	Min		7.5180		7.5180		7.2140	A 234 - WPB	0.9525				
OD	88.9	Avg		7.8990		7.8990		7.4930						
Spec.	B31.3								Comments:					

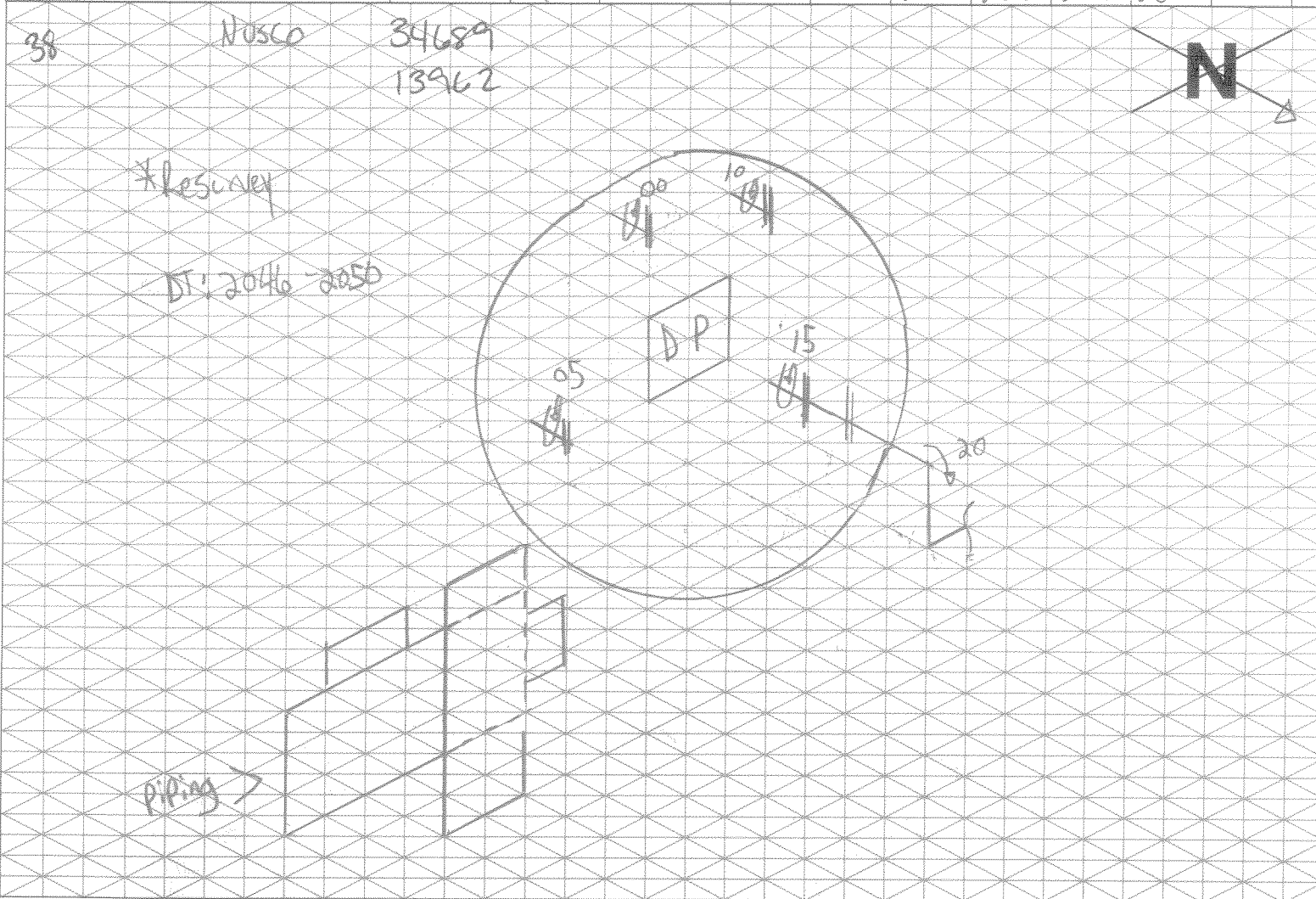
Comments:

DATE: July 19th / 2016

TECHNICIAN: Dusty Tucker

ASSISTANT: Bill Nash

Client Husky		LSD 10-32-46 -16 W5		Item Band Location	00	05	10	15	20						
Equipment Line Heater		Serial # / Manufacturer 010289 -210		Material	4/5	4/5	4/5	4/5	4/5						
CRN T3040.231	A# 539409	# 10-32BRA-140	Year Built 2005	OUTSIDE Diameter	3.5"	3.5"	3.5"	3.5"	3.5"						
DWG 19	Survey	Plant or Field (Circle) Northern Black Stone	PSIG / KPA 5031	F / C 200	CA .125"	Type	5	5	5	5	2				
						Comment	/	/	/	/	/				
						Nominal Thickness	A	A	A	A	A				



COMMENTS

- 1) Cryogenic Service
- 2) Insulated
- 3) No Name Plate
- 4) Name Plate Illegible
- 5) No Access
- 6) Too Hot
- 7) Rough Surface
- 8) O.D. Pitting
- 9) I.D. Pitting
- 10) Pipe / Plate (Circle One)

Piping Types

1. 90° Nozzle	6. 360° Circ Pipe
2. 90° Pipe	7. Tee Nozzle
3. 45° Nozzle	8. Tee Pipe
4. 45° Pipe	9. Straight Nozzle
5. 360° Circ Nozzle	10. Straight Pipe

Head Types

1 ellipsoidal	5 toriconical
2 torispherical	6 flat
3 spherical	7 hemispherical
4 conical	

Common Materials

A 53-B	C 516-70
B 106-B	D 234-WPB

Ensure all information is recorded for vessel boots, when applicable.

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PRESSURE VESSEL & COLUMN INSPECTION REPORT

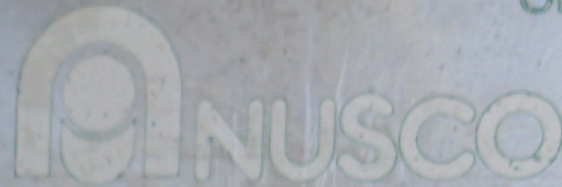
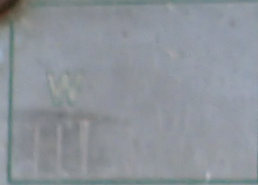
Date:

Equipment ID:

DETAILED INSPECTION VISUAL EXTERNAL

ID	Description	Condition			Location	NCR	Comments
		N/A	No	Good			
V1	General Other (Please Explain)			✓			
V2	General Corrosion						
V3	General Leaks						
V4	Vibration						
V5	Dissimilar Flange Rating						
V6	Ladder/Stairway						
V7	Heads						
V8	Guy Wires						
V9	Electrical Ground						
V10	Painted Inactive Corrosion						
V11	Coating/Painting						
V12	Expansion Joint or Bellows						
V13	Gauge/Site Glass						
V14	Shell						
V15	Jacket						
V21	Support Other (Please explain)						
V22	Foundation						
V23	Anchor Bolts						
V24	Saddle/Skirt						
V25	Davit						
V26	Fireproofing						
V31	Connections Other (Please explain)						
V32	Small Branches						
V33	Nozzles						
V34	Manways						
V35	Reinforcing Pads						
V36	Inadequate Thread Engagement						
V37	Bolting						
V38	Flanges						
V39	Leak Clamps						
V41	Insulation Other (Please explain)						
V42	Damage						
V43	Penetrations						
V44	Insulation Jacket						
V45	Banding						
V46	Seals/Joints						
V51	Relief Devices Other (Please explain)						
V52	Corrosion						
V53	Leaks						
V54	Restricted Inlet/Outlet						
V55	Manual Operation Lever						

CERTIFIED BY



NISKU, ALBERTA, CANADA

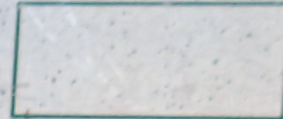
SERIAL
NO.

010280-210

YEAR
BUILT

2005

MODEL



COIL #1

MAWP

5031

PSIG

34680 KPa

AT

200

°F

93

°C

MDMT

-50

°F AT

5031

PSI

C.A.

0.125 IN

3.175 mm

THK.

0.600

IN

15.24

mm

R.T.

100%

COIL #2

MAWP

2025

PSIG

13962 KPa

AT

200

°F

93

°C

MDMT

-50

°F AT

2025

PSI

C.A.

0.125 IN

3.175 mm

THK.

0.438

IN

11.13

mm

R.T.

100%

GEN.

T302.261

A 539409

NUCO-5470

33

20

10-32 BRA

GRN.

13040-201

NUSCO-9070

10-32BRA-1401



