



## Data Book

**CLIENT:** Husky Oil Operations Ltd.

**AGENT:** Bar Engineering

**P.O#:** 8401416112

**FOREMOST WORK ORDER NO.:** W03-066732

**DESCRIPTION:** 1,000 BBL Sales Tank- Sour Versions Modifications

**FOREMOST DOCUMENT NUMBER:** W03-066732-DB\_r0

**REFERENCE DOCUMENT NUMBER:** N/A

DOC REV		DOCUMENT #	PAGES	BY	APPD	DATE
0		W03-066732-DB	32	JM		June 18, 2020

DESIGN STANDARD				COMMENTS

Notes:

This document contains all documentation for S/N 028328-2 & 028328-4.



## **Data Book**

**Husky Oil Operations Ltd.  
C/O Bar Engineering**

**Foremost Work Order:** W03-066732

**Location:** Sandall Bottom Water De-Pressurization

**P.O. #:** 8401416112

**1,000BBL Sales Tank- Sour Version (Modification)**

**Serial Number:** 028328-2 & 028328-4

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STANDARD WELD DETAILS (N.T.S.)

SHELL JOINT - VERTICAL

SHELL JOINT - HORIZONTAL

SHELL TO FLOOR

SHELL TO ROOF

ROOF JOINT

FLOOR JOINT

CUSTOMER SPECIFICATIONS

DESIGN CODE: API-650 MODIFIED

SERIAL NO: 028328-2 & 4

DESIGN PRESSURE: 12 oz. PRESS. / 0.4 oz. VAC.

DESIGN TEMPERATURE: -13°C(8.6°F) TO 93°C(200°F)

OPERATING TEMPERATURE: SOUR

OPERATING LEVEL: CORROSION ALLOWANCE: NONE

OTHER:

FINISHING

INTERNAL: SANDBLAST TANK SHELL, FLOOR & ROOF TO SSPC-SP5. APPLY 12-16mils DFT OF DEVOE 253HS, 2 COAT SYSTEM (OR EQUIVALENT). REMOVABLE INTERNAL PIPING TO BE UNCOATED C.S.

EXTERNAL: NONE

TESTING: AIR TEST AS PER API-650 7.3.7.1(a) TO 18.0 oz. (SPOT X-RAY, BY OTHERS)

FLOOR SEAMS TO BE VACUUM TESTED, 100% MAG. PARTICLE ON SHELL TO FLOOR EXTERNAL AND INTERNAL FILLET WELDS, 100% MAG. PARTICLE ON FIRETUBE FLANGE TO PIPE WELDS AND RANDOM SPOT X-RAY. FIRETUBES TO BE HYDROTEST AT 15 PSIG FOR 10 MINUTES. AIR TEST ALL REPADS TO 15 PSIG.



INSULATION: 51(2") URETHANE SPRAY FOAM INSULATION TO ENTIRE TANK SHELL & ROOF. ADDITIONAL 3" OF INSULATION ON ROOF AND 1" DOWN FROM TOP OF SHELL. FINISH WITH 20-25 MILS DFT BLACK ELASTOMERIC SEALER.

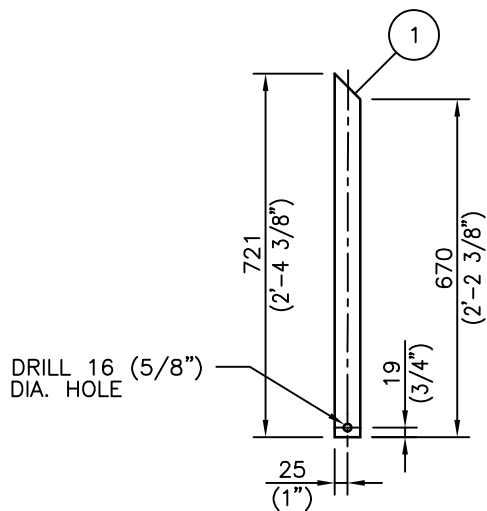
MODIFICATION SUMMARY

- ADDED N140.b NOZZLES.
- ADDED N15 NOZZLE.
- ADDED N160-d NOZZLES.
- ADDED N17 NOZZLE.
- ADDED N18 NOZZLE.
- REMOVED EXISTING N9 DOWNCOMER.
- ADDED INTERNAL RISER AND SUPPORTS TO N9 NOZZLE TO ELEVATION OF 5300mm.
- ADDED ANODE SUPPORTS TO N160-d NOZZLES.
- ADDED ENARDO PVRV, MODEL# 950-3-1113-28.0/20.4-C-F
- ADDED ENARDO EPVR, MODEL# 2020-211-1-211.5-101
- REMOVED OLD INTERNAL SAMPLE LINES AND INSTALLED NEW INTERNAL SAMPLE LINES C/W SUPPORTS FOR C3c-e
- SWAPPED N2 AND N8 INTERNAL SPOOLS.
- AIR TESTED REPADS, LP OUTSIDE OF NOZZLE FLANGE TO PIPE WELD JOINT AND LP OUTSIDE OF NON REPAD NOZZLE/COUPLING TO SHELL WELD JOINT.
- REPAIRED INTERNAL COATING AND INSULATION USING SCAFFOLDING.
- BLASTED ALL THE INTERNAL PIPING (INSIDE AND OUTSIDE OF SPOOLS) TO SSPC-SP5 AND APPLIED 12-16 mils DFT OF DEVOE 253.

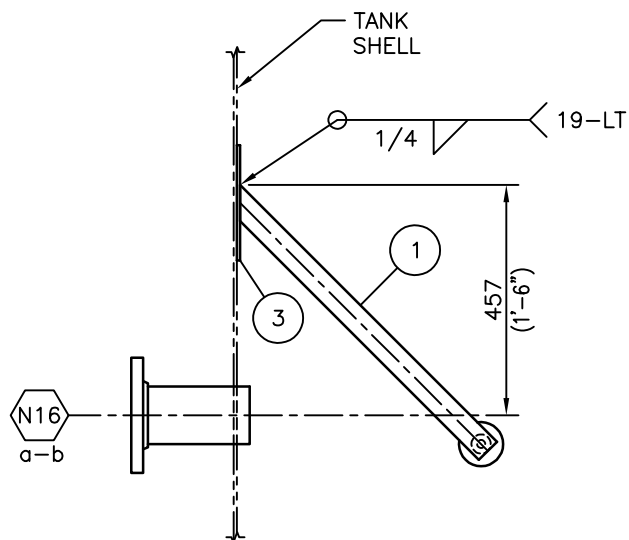
NOZZLE SCHEDULE

MK	NO	SIZE	SCH	RATE	TYPE	PROJECTION INT.	REPAD YES	REPAD NO	DESCRIPTION	MK	QTY	DESCRIPTION	MATERIAL	WT		
N2	1	219	8"	STD	CLASS 150	RFSO	203	8"	✓	SPILL OVER OUTLET C/W INTERNAL RISER	1	2	FLOOR PLATE (HALF) 1/4" THK. x 15'-7 1/2" DIA. (G40.21-38W)	PRT-2425	1956	
N3	1	60	2"	STD	CLASS 150	RFSO	FLUSH	254	10"	✓	TANK LEVEL	2	2	ROOF PLATE (HALF) 3/16" THK. x 15'-9 1/8" FLAT DIA. (G40.21-38W)	PRT-6996	1452
N4	1	114	4"	XS	CLASS 150	RFSO	25	1"	✓	DRAIN C/W GATE VALVE (IN VAULT)	3	4	SHELL PLATE 1/4" THK. x 8'-0" x 47'-11 11/16" LG. (G40.21-38W)	G40.21-38W	15674	
N4	1	114	4"	XS	CLASS 150	RFSO	25	1"	✓	STINGER	4					
N5	1	89	3"	STD	CLASS 150	RFSO	AS SHOWN	152	6"	✓	WATER OUTLET C/W BALL VALVE BY OTHERS & DOWNCOMER (N VAULT)	5				
N6	1	89	3"	STD	CLASS 150	RFSO	AS SHOWN	152	6"	✓	OIL UNLOADING C/W BALL VALVE BY OTHERS, RISER & VORTEX BREAKER (N VAULT)	6				
N7	1	89	3"	STD	CLASS 150	RFSO	AS SHOWN	152	6"	✓	WATER OUTLET C/W DOWNCOMER (N VAULT)	7	1	RUNAROUND ANGLE 2" x 2" x 3/16" x 48'-6 3/8" LG. (G40.21-44W)	G40.21-44W	118
N8	1	219	8"	STD	CLASS 150	RFSO	203	8"	✓	SPILL OVER INLET FROM PROD. TANK C/W INTERNAL DOWNCOMER & 90° ELBOW	8	1	STACK 8" THIN WALL (NO DAMPER)	REF. DWG. T-028328-B106	-	
N9	1	89	3"	STD	CLASS 150	RFSO	152	6"	✓	OUTLET C/W INTERNAL FLANGE & RISER	9	1	UPPER & LOWER LADDER (CWB STYLE)	PRT-6997	404	
N10	1	89	3"	STD	CLASS 150	RFSO	152	6"	✓	FUTURE OIL OUTLET TO TRANSFER PUMP C/W RISER & VORTEX BREAKER	10					
N11	1	114	4"	STD	CLASS 150	RFSO	152	6"	✓	INCINERATOR C/W INTERNAL RISER (C.S.)	11	1	BURNER CONTROL BOX (2'-0" HIGH x 2'-6" LG. x 8" DEEP)	ALUMINUM	-	
N12	1	114	4"	STD	CLASS 150	RFSO	25	1"	✓	FG/BLANKET	12	1	HAWKEYE REDTAIL LEVEL INDICATOR ASSY C/W GAUGE HEAD, METRIC BOARD, PVC FLOAT, GUIDE WIRES, FLOOR CLIPS, CABLE TIGHTENERS & MISC. HARDWARE	REF. DWG. T-028328-B111	111	
C3	5	25	1"	-	CLASS 3000	FULL CPLG	HALF	HALF	✓	SAMPLE CONNECTIONS C/W SPRING LOADED BALL VALVES (N VAULT)	13	4	LIFTING LUG	PRT-4275	30	
C5	1	51	2"	-	CLASS 3000	FULL CPLG	HALF	HALF	✓	LEVEL INDICATOR (HAWKEYE - REDTAIL)	14	1	SERVICE LUG C/W REPAD	PRT-4276	10	
C5	2	32	1 1/4"	-	CLASS 3000	FULL CPLG	HALF	HALF	✓	FLOAT GUIDE WIRES	15	1	SHELL MANWAY 2'-0" x 4'-0" C/W 1/4" SPLIT COVER	PRT-1221	191	
C6	2	19	3/4"	-	CLASS 3000	FULL CPLG	HALF	HALF	✓	TI (0°C - 100°C)	16	1	NAMEPLATE BRACKET C/W NAMEPLATE	PRT-2896	5	
C7	1	25	1"	-	CLASS 3000	FULL CPLG	HALF	HALF	✓	TC C/W PLUG (FUTURE)	17	6	TANK HAULING PAD (1/4" - 6" DEEP)	REF. DWG. T-028328-A108	180	
C8	1	19	3/4"	-	CLASS 3000	FULL CPLG	HALF	HALF	✓	TI (200°F - 1000°F) STACK	18	1	NOZZLE DETAIL	REF. DWG. T-028328-D102	390	
C10	1	19	3/4"	-	CLASS 3000	FULL CPLG	HALF	HALF	✓	STACK SPARE C/W PLUG	19	1	FIRETUBE REMOVABLE U-TUBE 10" SCH STD. (EXTENDED LENGTH) 750,000 BTU/HR.	REF. DWG. T-028328-B106	1986	
C11	1	19	3/4"	-	CLASS 3000	FULL CPLG	HALF	HALF	✓	BURNER MAINTENANCE C/W PLUG	20	1	CHANNEL C4 x 5.4# x 7'-6 11/16" LG. (G40.21-44W)	G40.21-44W	41	
T1	1	219	8"	STD	-	FAB'D	25									

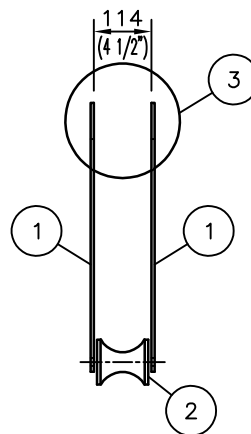
19/05/20	AS-BUILT, CHANGED NOTE 13 IN MODIFICATION SUMMARY & ADDED 6" LG. PIPE TO N9 SPOOL TO AVOID CLASHING N9 & N10 RISERS			RR	TZ
19/12/19	ISSUED FOR CONSTRUCTION			RR	TZ
09/12/19	ISSUED FOR CUSTOMER APPROVAL			RR	TZ
NO. DATE (a/m/y)				REVISIONS	BY APPD
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<p>CUSTOMER: HUSKY OIL OPERATIONS LTD. C/O BAR ENGINEERING SANDALL BOTTOM WATER DE-PRESSURIZATION P.O. # 8401416112</p>					
<p>DWG TITLE: 1000 BBL SALES TANK – SOUR VERSION GENERAL ARRANGEMENT (MODIFICATION)</p>					
<p>SIZE: 4648mm I.D. x 9754mm HIGH (15'-3" I.D. x 32'-0" HIGH)</p>			<p>VOLUME: 159 CU. METERS (1000 Bbl)</p>		
SCALE: 1:30	<p>DWY BY: R. RANASINGHE</p>		<p>DWG NO. W03-066732-D101</p>	<p>SHEET NO. 1 of 1</p>	
<p>DATE (a/m/y) 05/12/19</p>	<p>CHKD GLB 19/05/20</p>	<p>APPD TZ 19/05/20</p>			



MK.#1 DETAIL



INSTALLATION DETAIL



ROLLER ASSEMBLY

MATERIAL REQUIREMENTS						
M (MTR's):		NONE				
I (IMPACT TESTING):		NONE				
C (CHEMISTRY):		NONE				
MK	QTY	PART NO.	DESCRIPTION	CUT LENGTH	MAT'L	WT
1	2	2111	FLATBAR 1/4" THK. x 2" WIDE	721	SA479-316L S.S.	8
2	1	4190	ROLLER ASS'Y	-	WOOD	2
3	1	2521	REPAD PLATE 1/4" THK. x 9" DIA.	-	G40.21-38W	5
4						
5						

SUBTOTAL	15
x 1.06	
TOTAL (lbs.)	16

NOTES:

1. ALL DIMENSIONS ARE IN S.I. AND IMPERIAL UNITS. DIMENSIONS IN BRACKETS ARE IMPERIAL HARD CONVERSIONS FOR SHOP REFERENCE ONLY.

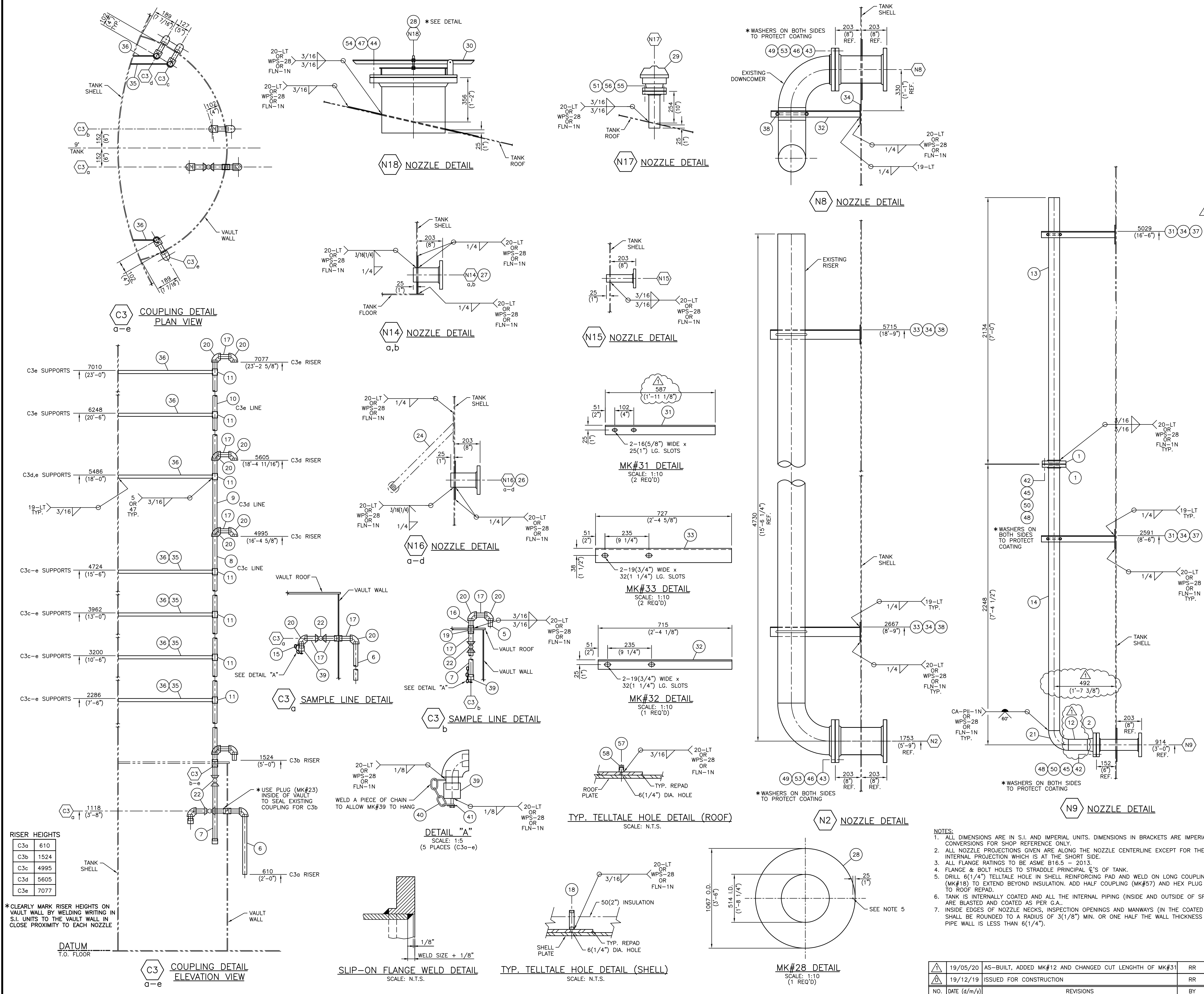
1	19/05/20	AS-BUILT, NO CHANGE	RR	TZ
0	19/12/19	ISSUED FOR CONSTRUCTION	RR	TZ
NO.	DATE (d/m/y)	REVISIONS	BY	APPD

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**FOREMOST**

CLIENT		HUSKY OIL OPERATIONS LTD. C/O BAR ENGINEERING		
DWG TITLE		1000 BBL SALES TANK - SOUR VERSION ANODE ROLLER SUPPORT DETAILS		
NO. REQ'D 4 PER TANK (8 TOTAL)		WO. NO. 03-066732	LEG NO.	
SCALE 1:15	DWN BY R. RANASINGHE	DWG NO. W03-066732-A103	SHT NO. 1 OF 1	REV 1
DATE (d/m/y) 17/12/19	CHKD GLB 19/05/20	APPD TZ 19/05/20		





MATERIAL LIST						
MATERIAL REQUIREMENTS						
M (MTR's): I (IMPACT TESTING): C (CHEMISTRY):		NONE NONE NONE				
MK	QTY	PART NO.	DESCRIPTION	CUT LENGTH	MATERIAL	WT MAT REQ
1	2	1329	FLANGE 3" CLASS 150 RF50	—	SA-105N	18 —
2	1	1122	FLANGE 3" CLASS 150 RFWN x SCH STD BORE	—	SA-105N	12 —
3						
4						
5	1	2182	PIPE 1" SCH XS SMLS POE x TOE	65	SA-106-B	1 —
6	1	2182	PIPE 1" SCH XS SMLS POE x TOE	481	SA-106-B	3 —
7	4	2182	PIPE 1" SCH XS SMLS TBE	457	SA-106-B	13 —
8	1	2182	PIPE 1" SCH XS SMLS TBE	3500	SA-106-B	25 —
9	1	2182	PIPE 1" SCH XS SMLS TBE	4110	SA-106-B	29 —
10	1	2182	PIPE 1" SCH XS SMLS TBE	5582	SA-106-B	40 —
11	16	—	PIPE 1 1/4" SCH 40S "WELDED" PBE	51	SA312-TP316L SS	6 —
12	1	2234	PIPE 3" SCH STD SMLS BBE	152	SA-106-B	4 —
13	1	2234	PIPE 3" SCH STD SMLS POE x ROE	2126	SA-106-B	53 —
14	1	2234	PIPE 3" SCH STD SMLS POE x BOE	2126	SA-106-B	53 —
15	1	1164	NIPPLE 1" SCH XS x 2" LG. SMLS TBE	—	SA-106-B	1 —
16	1	1327	NIPPLE 1" SCH XS x 3" LG. SMLS TBE	—	SA-106-B	1 —
17	11	1250	NIPPLE 1" SCH XS x 4" LG. SMLS TBE	—	SA-106-B	8 —
18	6	21510	LONG CPLG. 1/4" x 3000# F.S. SCR'D x 3" LG.	—	SA-105N	2 —
19	1	1260	FULL CPLG. 1" 3000# F.S. SCR'D	—	SA-105N	1 —
20	10	1879	ELBOW 1" 3000# x 90° F.S. SCR'D	—	SA-105N	4 —
21	1	1593	ELBOW 3" SCH STD x 90° L.R.	—	SA-234-WPB	5 —
22	5	6514	BALL VALVE 1" 2000# WOG RP CS	—	—	10 —
23	1	1330	HEX PLUG 1" 3000# F.S. THR'D	—	SA-105N	1 —
24	4	—	ANODE ROLLER SUPPORT DETAIL	—	CALLED UP ON G.A.	— —
25						
26	4	1540	REPAD PLATE 1/4" THK. — 4" SHELL NOZZLE	—	G40.21-38W	28 —
27	2	4393	DOGHOUSE REPAD PLATE 1/4" THK. — 4" SHELL NOZZLE	—	G40.21-38W	16 —
28	1	3108	REPAD PLATE 3/16" THK. 1'-8 1/4" I.D. x 3'-6" O.D.	—	G40.21-38W	57 —
29	1	—	ENARDO PVRV, MODEL # 950-3-1113-Z8.0/20.4-C-F	—	—	15 —
30	1	—	ENARDO EPRV, MODEL # 2020-21T-1-Z11.5-1D1	—	—	30 —
31	2	7023	ANGLE 2" x 2" x 1/4"	587	SA479-316L S.S.	22 —
32	1	7023	ANGLE 2" x 2" x 1/4"	715	SA479-316L S.S.	8 —
33	2	10833	ANGLE 3" x 3" x 1/4"	727	SA479-316L S.S.	24 —
34	5	5948	REPAD PLATE 1/4" THK. x 6" DIA.	—	G40.21-38W	10 —
35	4	10356	FLATBAR 1/4" x 1"	300	SA479-304L S.S.	3 —
36	12	10356	FLATBAR 1/4" x 1"	170	SA479-304L S.S.	6 —
37	2	1698	U-BOLT 1/2" x 3" NPS C/W NUTS	—	S.S.	4 —
38	3	1681	U-BOLT 5/8" x 8" NPS C/W NUTS	—	S.S.	12 —
39	5	2384	PIPE CAP 1" 3000# F.S. THR'D	—	SA-105N	5 —
40	5	—	CHAIN LIGHT DUTY 3/16" x 6" LG.	—	GR.30 C.S.	2 —
41	5	—	BOLT 1/4" DIA. x 1" LG. C/W FLAT WASHER	—	GR. 5	1 —
42	8	1788	STUD 5/8" DIA. x 4 1/4" LG.	—	SA-193-BM (316 S.S.)	2 —
43	16	11517	STUD 3/4" DIA. x 5" LG.	—	SA-193-BM (316 S.S.)	10 —
44	20	—	STUD 1 1/8" DIA. x 7 1/4" LG.	—	SA-193-B7	40 —
45	16	1787	HEAVY HEX NUT 5/8" NOM.	—	SA-194-BM (316 S.S.)	1 —
46	32	1851	HEAVY HEX NUT 3/4" NOM.	—	SA-194-BM (316 S.S.)	3 —
47	40	1806	HEX NUT 1 1/8" NOM.	—	SA-194-2H	8 —
48	16	1852	WASHER 5/8" NOM.	—	S.S.	1 —
49	32	1709	WASHER 3/4" NOM.	—	S.S.	1 —
50	2	11740	GASKET 3" CLASS 150 RF x 1/8" THK.	—	LINEBACKER	2 —
51	1	—	GASKET 3" CLASS 150 FF x 1/8" THK.	—	LINEBACKER	1 —
52						
53	2	11743	GASKET 8" CLASS 150 RF x 1/8" THK.	—	LINEBACKER	2 —
54	1	—	GASKET 20" CLASS 150 FF x 1/8" THK.	—	LINEBACKER	1 —
55	4	1848	STUD 5/8" DIA. x 4 1/4" LG.	—	SA-193-B7	1 —
56	8	1802	HEX NUT 5/8" NOM.	—	SA-194-2H	1 —
57	1	1926	HALF CPLG. 1/4" 3000# F.S. SCR'D	—	SA-105N	1 —
58	1	1288	HEX PLUG 1/4" 3000# F.S. THR'D	—	SA-105N	1 —
TOTAL						646

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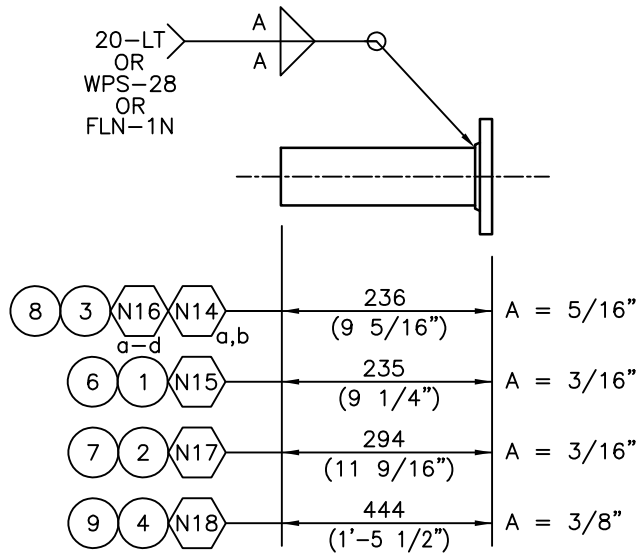
# FOREMOST

CLIENT: HUSKY OIL OPERATIONS LTD.  
C/O BAR ENGINEERING  
SANDALL BOTTOM WATER DE-PRESSURIZATION  
P.O.# 8401416112

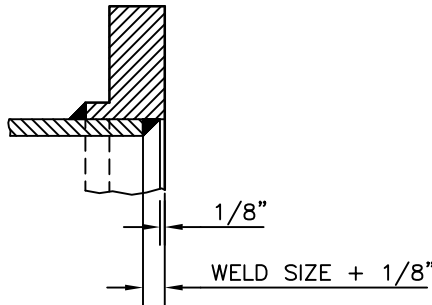
DWG TITLE: 1000 BBL SALES TANK – SOUR VERSION  
NOZZLE DETAIL (MODIFICATION)

NO. REQ'D: 2	DWN BY: R. RANASINGHE	WO. NO. 03-066732	LEG. NO.
SCALE: 1:15	CHKD: GLB	DWG. NO. W03-066732-D102	SHEET NO. REV. NO. 1 of 2
DATE (d/m/y): 17/12/19	APPD: TZ		

NO. DATE (d/m/y) REVISIONS BY APPD



NOZZLE SPOOL DETAIL



SLIP-ON FLANGE WELD DETAIL

N.T.S.

- NOTES:
1. ALL DIMENSIONS ARE IN S.I. AND IMPERIAL UNITS. DIMENSIONS IN BRACKETS ARE IMPERIAL HARD CONVERSIONS FOR SHOP REFERENCE ONLY.
  2. ALL FLANGE RATINGS TO BE ASME B16.5 - 2013.
  3. TAG SPOOLS WITH TANK # AND NOZZLE #.

MATERIAL REQUIREMENTS							
M (MTR's):		NONE					
I (IMPACT TESTING):		NONE					
C (CHEMISTRY):		NONE					
MK	QTY	PART NO.	DESCRIPTION	CUT LENGTH	MAT'L	WT	MAT REQ
1	1	1349	FLANGE 2" CLASS 150 RFSO	-	SA-105N	5	-
2	1	1322	FLANGE 3" CLASS 150 FFSO	-	SA-105N	9	-
3	6	1462	FLANGE 4" CLASS 150 RFSO	-	SA-105N	72	-
4	1	-	FLANGE 20" CLASS 150 FFSO	-	SA-105N	155	-
5							
6	1	2218	PIPE 2" SCH XS SMLS POE x ROE	227	SA-106-B	4	-
7	1	2234	PIPE 3" SCH STD SMLS POE x ROE	287	SA-106-B	7	-
8	6	2248	PIPE 4" SCH XS SMLS POE x ROE	225	SA-106-B	66	-
9	1	-	PIPE 20" SCH STD SMLS POE x ROE	431	SA-106-B	112	-
10							
11							
12							
						SUBTOTAL	430
						x 1.06	
						TOTAL (lbs.)	456

	19/05/20	AS-BUILT, NO CHANGE	RR	TZ
	19/12/19	ISSUED FOR CONSTRUCTION	RR	TZ
NO.	DATE (d/m/y)	REVISIONS	BY	APPD
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CLIENT HUSKY OIL OPERATIONS LTD. C/O BAR ENGINEERING				
DWG TITLE 1000 BBL SALES TANK - SOUR VERSION NOZZLE SPOOL DETAILS (MODIFICATION)				
NO. REQ'D 2		WO. NO. 03-066732		LEG NO.
SCALE 1:15		DWN BY R. RANASINGHE		SHT NO.
DATE (d/m/y) 18/12/19		CHKD GLB 19/05/20	APPD TZ 19/05/20	REV 1
		W03-066732-D102		2 OF 2



Storage Tank  
Quality / Inspection & Test Plan  
Revision 0

W.O.# W03-066732

Serial Number: 028328-2

Description: 1000BBL Sales Tank – Sour Mod's

Ref	Activity Description	QC Activity Required	Acceptance Criterion	Verifying Documents	Foremost Req	Duty	Foremost Approval and Date
<b>A. Approvals</b>							
1.	Drawing Approvals	- Confirm fabrication drawing approvals	API-650 / 12F	Issued for Construction Drawings	H D	QC / F	<i>AW</i> Feb 24, 2020
<b>B. Receipt Inspection</b>							
1.	Nozzle Pipe	- Confirm thickness, material type, dimensions and quantities as per approved drawings	Approved Drawings	This ITP	H I	QC / F	<i>DP</i> MAR 5
<b>C. In Process Inspection</b>							
1.	Material cutting and beveling	- Monitor correct material per drawing and traceable to the work order number	Component drawing(s)	This ITP	I / V	F	<i>DP</i> MAR 5
2.	Nozzle Prefabrication	- Confirm correct size, rating, schedule and dimensions	Nozzle drawings	This ITP	I / V	F	<i>DP</i> MAR 5
3.	Nozzle Flange Condition	- Confirm gasket surface is free from damage	ASME B16.5	This ITP	I / V	F	<i>DP</i> MAR 5
4.	Nozzle Lay-out (Shell and Roof)	- Confirm correct orientation and elevation - Confirm correct nozzle size, rating, schedule and if repad req'd	General Arrangement & Nozzle drawings	This ITP	I / V	F	<i>DP</i> MAR 5
5.	Nozzle Fit-up	- Confirm flange face is two-holed, level & square to vessel - Confirm proper external & internal projection - Confirm repad dimensions - Confirm weld joint configuration and gap	General Arrangement & Nozzle drawings	This ITP	I / V	F	<i>DP</i> MAR 5

## Legend:

Requirements: I – Inspect  
W – Witness  
H – Hold Point  
D – Documents Required  
V – Verify

Duty: QC – Quality Control  
F – Foreman  
P – Projects



# Storage Tank

## Quality / Inspection & Test Plan

### Revision 0

W.O.# W03-066732

Serial Number: 028328-2

Description: 1000BBL Sales Tank – Sour Mod's

Ref	Activity Description	QC Activity Required	Acceptance Criterion	Verifying Documents	Foremost Req	Duty	Foremost Approval and Date
6.	Internal Piping and Attachments	- Confirm all internal piping is installed c/w appropriate studs, nuts and gaskets, and that all pipe support and flange nuts have been tightened. - Confirm internal attachments are in correct location/position	Component drawings	This ITP	I / V	F	BP MAR 5
7.	Welding Visual Examination	- Verify weld profile, appearance, size, reinforcement and contours on all welds	Component drawings and Foremost's storage tank visual inspection criteria	This ITP	I / V	QC / F	BP MAR 5
<b>D. NDE</b>							
<b>D.1 Liquid Penetrant Examination</b>							
1.	Nozzle Flange to Pipe Outside Welds and Nozzle Pipe / Coupling to Shell Outside Welds	- Perform PT on all nozzle pipe to flange outside welds and on all non repaded nozzle / coupling to shell outside welds	ASME Section VIII, Annex 8, Paragraphs 8-3, 8-4 and 8-5	NDE Reports and this ITP	I D	QC / F	BP MAR 5
<b>D.2 Air Testing</b>							
1.	Nozzle Repads	- Ensure test gauge is of proper range and condition is acceptable for the test. - Ensure test gauge calibration is current - Air / soap test nozzle repads to 15 psi - Ensure test gauge serial number is recorded on the test report	Gauge must have been calibrated within one year of the test date and API-650 Paragraph 7.3.4	Test Gauge Calibration Records, Nozzle Repad Test Reports and this ITP	I D	QC / F	BP MAR 5
<b>E. Final Inspection and Release for Coating &amp; Insulation Repairs</b>							
1.	Mechanical Walk Through and Release for Air Test	- Ensure tank is complete and as per the construction drawings. - Confirm all welds have been marked with welder I.D. symbols. - Confirm all internal and external welds are in accordance with Code requirements - Confirm all required NDE has been completed.	Approved for construction drawings	This ITP	H I D	QC / F	BP May 8, 2020

## Legend:

Requirements: I – Inspect  
W – Witness  
H – Hold Point  
D – Documents Required  
V – Verify

Duty: QC – Quality Control  
F – Foreman  
P – Projects





Storage Tank  
Quality / Inspection & Test Plan  
Revision 0

**W.O.#**      **W03-066732**

**Serial Number:**    **028328-2**

**Description:**      **1000BBL Sales Tank – Sour Mod's**

Ref	Activity Description	QC Activity Required	Acceptance Criterion	Verifying Documents	Foremost Req	Duty	Foremost Approval and Date
<b>G. Internal Coating (Foremost)</b>							
1.	Test Equipment Calibration	- Confirm testing equipment is calibrated and acceptable for use	Calibration Records	This ITP	V	QC/F	HL May 11-20
2.	Internal Blast Profile Achieved (As Per Drawings)	- Confirm internal blast profile is in accordance with Coating Manufacturer's	Approved Drawings	Surface Preparation Section of Coating Report and this ITP	D	F	BM May 11-20
3.	Verify Coating Material (As Per Drawings)	- Confirm coating material is as per Client requirements	Approved Drawings and	Applied Coating Section of Coating Report and this ITP	D	F	BM May 11-20
4.	First Internal Coat Inspection (As Per Drawings)	- Visually inspect coating for defects, measure and record DFT.	Manufacturer's Recommendations	Applied Coating Section of Coating Report and this ITP	D	F	BM May 11-20
5.	Second Internal Coat Inspection (if applicable) (As Per Drawings)	- Visually inspect coating for defects, measure and record DFT.	Manufacturer's Recommendations	Applied Coating Section of Coating Report and this ITP	D	F	BM May 11-20
6.	Final Coating Inspection	- Visually inspect coating for defects, measure and record final DFT.	Manufacturer's Recommendations	Applied Coating Section of Coating Report and this ITP	D	F	BM May 11-20
7.	Holiday Testing	- Examine the entire coated surface for defects using a wet sponge type holiday detector/ or high voltage	Holiday Free	Holiday Testing Section of Coating Report and this ITP	D	F	BM May 11-20
<b>I. Insulation</b>							
1.	Foam Urethane Thickness (As Per Drawings)	- Ensure urethane insulation thickness is no less that specified on the drawings	Approved Drawings	This ITP	V	F	BM May 11-20
2.	Sealer Coverage (As Per Drawings)	- Ensure sealer coverage is even and no urethane is exposed	No Exposed Insulation	This ITP	V	F	BM May 11-20

**Legend:**

Requirements: I – Inspect  
W – Witness  
H – Hold Point  
D – Documents Required  
V – Verify

Duty: QC – Quality Control  
F – Foreman  
P – Projects






Storage Tank  
Quality / Inspection & Test Plan  
Revision 0

W.O.# W03-066732

Serial Number: 028328-2

Description: 1000BBL Sales Tank – Sour Mod's

Ref	Activity Description	QC Activity Required	Acceptance Criterion	Verifying Documents	Foremost Req	Duty	Foremost Approval and Date
3.	Final Insulation Inspection	<ul style="list-style-type: none"> <li>- Ensure all masking tape and poly has been removed</li> <li>- Ensure even trimming around appurtenances</li> <li>- Ensure all openings are accounted for (shell and roof couplings)</li> </ul>	Industry Standards	This ITP	V	F	 May 11-20
<b>J. Preparation for Shipment</b>							
1.	Preparation for Shipment	<ul style="list-style-type: none"> <li>- Ensure tank internal has been swept and free of debris</li> <li>- Ensure all enviro vault internal / external piping, applicable valves and riser labeling have been installed</li> <li>- Ensure all accessories have been installed on and in the tank in accordance with the approved drawings</li> <li>- Ensure burner flange, stack, couplings and all nozzles have appropriate blinds, shipping covers or plugs installed</li> </ul>	Approved Drawings	This ITP	H I	QC / P	 May 12, 2020
<b>K. Documentation</b>							
1.	Document Review and Retention	<ul style="list-style-type: none"> <li>- Confirm all documents required for the turnover package have been checked for accuracy and completeness</li> <li>- Ensure data package is scanned and saved electronically by tank serial number</li> </ul>	Approved Drawings Project Specifications	Approved Data Package	H I D	QC	 May 12, 2020

## Legend:

Requirements: I – Inspect  
W – Witness  
H – Hold Point  
D – Documents Required  
V – Verify

Duty: QC – Quality Control  
F – Foreman  
P – Projects



# Storage Tank

## Quality / Inspection & Test Plan

### Revision 0

W.O.# W03-066732

Serial Number: 028328-4

Description: 1000BBL Sales Tank – Sour Mod's

Ref	Activity Description	QC Activity Required	Acceptance Criterion	Verifying Documents	Foremost Req	Duty	Foremost Approval and Date
<b>A. Approvals</b>							
1.	Drawing Approvals	- Confirm fabrication drawing approvals	API-650 / 12F	Issued for Construction Drawings	H D	QC / F	<i>AW</i> Feb 24, 2020
<b>B. Receipt Inspection</b>							
1.	Nozzle Pipe	- Confirm thickness, material type, dimensions and quantities as per approved drawings	Approved Drawings	This ITP	H I	QC / F	<i>APMA35</i>
<b>C. In Process Inspection</b>							
1.	Material cutting and beveling	- Monitor correct material per drawing and traceable to the work order number	Component drawing(s)	This ITP	I / V	F	<i>APMA35</i>
2.	Nozzle Prefabrication	- Confirm correct size, rating, schedule and dimensions	Nozzle drawings	This ITP	I / V	F	<i>APMA35</i>
3.	Nozzle Flange Condition	- Confirm gasket surface is free from damage	ASME B16.5	This ITP	I / V	F	<i>APMA35</i>
4.	Nozzle Lay-out (Shell and Roof)	- Confirm correct orientation and elevation - Confirm correct nozzle size, rating, schedule and if repad req'd	General Arrangement & Nozzle drawings	This ITP	I / V	F	<i>APMA35</i>
5.	Nozzle Fit-up	- Confirm flange face is two-holed, level & square to vessel - Confirm proper external & internal projection - Confirm repad dimensions - Confirm weld joint configuration and gap	General Arrangement & Nozzle drawings	This ITP	I / V	F	<i>APMA35</i>

## Legend:

Requirements: I – Inspect  
W – Witness  
H – Hold Point  
D – Documents Required  
V – Verify

Duty: QC – Quality Control  
F – Foreman  
P – Projects








Storage Tank  
Quality / Inspection & Test Plan  
Revision 0

W.O.# W03-066732

Serial Number: 028328-4

Description: 1000BBL Sales Tank – Sour Mod's

Ref	Activity Description	QC Activity Required	Acceptance Criterion	Verifying Documents	Foremost Req	Duty	Foremost Approval and Date
6.	Internal Piping and Attachments	- Confirm all internal piping is installed c/w appropriate studs, nuts and gaskets, and that all pipe support and flange nuts have been tightened. - Confirm internal attachments are in correct location/position	Component drawings	This ITP	I / V	F	 MAR 5
7.	Welding Visual Examination	- Verify weld profile, appearance, size, reinforcement and contours on all welds	Component drawings and Foremost's storage tank visual inspection criteria	This ITP	I / V	QC / F	 MAR 5
<b>D. NDE</b>							
<b>D.1 Liquid Penetrant Examination</b>							
1.	Nozzle Flange to Pipe Outside Welds and Nozzle Pipe / Coupling to Shell Outside Welds	- Perform PT on all nozzle pipe to flange outside welds and on all non repaded nozzle / coupling to shell outside welds	ASME Section VIII, Annex 8, Paragraphs 8-3, 8-4 and 8-5	NDE Reports and this ITP	I D	QC / F	 MAR 5
<b>D.2 Air Testing</b>							
1.	Nozzle Repads	- Ensure test gauge is of proper range and condition is acceptable for the test. - Ensure test gauge calibration is current - Air / soap test nozzle repads to 15 psi - Ensure test gauge serial number is recorded on the test report	Gauge must have been calibrated within one year of the test date and API-650 Paragraph 7.3.4	Test Gauge Calibration Records, Nozzle Repad Test Reports and this ITP	I D	QC / F	 MAR 5
<b>E. Final Inspection and Release for Coating &amp; Insulation Repairs</b>							
1.	Mechanical Walk Through and Release for Air Test	- Ensure tank is complete and as per the construction drawings. - Confirm all welds have been marked with welder I.D. symbols. - Confirm all internal and external welds are in accordance with Code requirements - Confirm all required NDE has been completed.	Approved for construction drawings	This ITP	H I D	QC / F	 May 8, 2020

## Legend:

Requirements: I – Inspect  
W – Witness  
H – Hold Point  
D – Documents Required  
V – Verify

Duty: QC – Quality Control  
F – Foreman  
P – Projects



Storage Tank  
Quality / Inspection & Test Plan  
Revision 0

W.O.# W03-066732

Serial Number: 028328-4

Description: 1000BBL Sales Tank – Sour Mod's

Ref	Activity Description	QC Activity Required	Acceptance Criterion	Verifying Documents	Foremost Req	Duty	Foremost Approval and Date
<b>G. Internal Coating (Foremost)</b>							
1.	Test Equipment Calibration	- Confirm testing equipment is calibrated and acceptable for use	Calibration Records	This ITP	V	QC/F	HL May 11-20
2.	Internal Blast Profile Achieved (As Per Drawings)	- Confirm internal blast profile is in accordance with Coating Manufacturer's	Approved Drawings	Surface Preparation Section of Coating Report and this ITP	D	F	BM May 11-20
3.	Verify Coating Material (As Per Drawings)	- Confirm coating material is as per Client requirements	Approved Drawings and	Applied Coating Section of Coating Report and this ITP	D	F	BM May 11-20
4.	First Internal Coat Inspection (As Per Drawings)	- Visually inspect coating for defects, measure and record DFT.	Manufacturer's Recommendations	Applied Coating Section of Coating Report and this ITP	D	F	BM May 11-20
5.	Second Internal Coat Inspection (if applicable) (As Per Drawings)	- Visually inspect coating for defects, measure and record DFT.	Manufacturer's Recommendations	Applied Coating Section of Coating Report and this ITP	D	F	BM May 11-20
6.	Final Coating Inspection	- Visually inspect coating for defects, measure and record final DFT.	Manufacturer's Recommendations	Applied Coating Section of Coating Report and this ITP	D	F	BM May 11-20
7.	Holiday Testing	- Examine the entire coated surface for defects using a wet sponge type holiday detector/ or high voltage	Holiday Free	Holiday Testing Section of Coating Report and this ITP	D	F	BM May 11-20
<b>I. Insulation</b>							
1.	Foam Urethane Thickness (As Per Drawings)	- Ensure urethane insulation thickness is no less that specified on the drawings	Approved Drawings	This ITP	V	F	BM May 11-20
2.	Sealer Coverage (As Per Drawings)	- Ensure sealer coverage is even and no urethane is exposed	No Exposed Insulation	This ITP	V	F	BM May 11-20

## Legend:

Requirements: I – Inspect  
W – Witness  
H – Hold Point  
D – Documents Required  
V – Verify

Duty: QC – Quality Control  
F – Foreman  
P – Projects



Storage Tank  
Quality / Inspection & Test Plan  
Revision 0

W.O.# W03-066732

Serial Number: 028328-4

Description: 1000BBL Sales Tank – Sour Mod's

Ref	Activity Description	QC Activity Required	Acceptance Criterion	Verifying Documents	Foremost Req	Duty	Foremost Approval and Date
3.	Final Insulation Inspection	<ul style="list-style-type: none"> <li>- Ensure all masking tape and poly has been removed</li> <li>- Ensure even trimming around appurtenances</li> <li>- Ensure all openings are accounted for (shell and roof couplings)</li> </ul>	Industry Standards	This ITP	V	F	<i>3M</i> <i>May 11-20</i>
<b>J. Preparation for Shipment</b>							
1.	Preparation for Shipment	<ul style="list-style-type: none"> <li>- Ensure tank internal has been swept and free of debris</li> <li>- Ensure all enviro vault internal / external piping, applicable valves and riser labeling have been installed</li> <li>- Ensure all accessories have been installed on and in the tank in accordance with the approved drawings</li> <li>- Ensure burner flange, stack, couplings and all nozzles have appropriate blinds, shipping covers or plugs installed</li> </ul>	Approved Drawings	This ITP	H I	QC / P	<i>hl</i> <i>May 12/2020</i>
<b>K. Documentation</b>							
1.	Document Review and Retention	<ul style="list-style-type: none"> <li>- Confirm all documents required for the turnover package have been checked for accuracy and completeness</li> <li>- Ensure data package is scanned and saved electronically by tank serial number</li> </ul>	Approved Drawings Project Specifications	Approved Data Package	H I D	QC	<i>hl</i> <i>May 12/2020</i>

## Legend:

Requirements: I – Inspect  
W – Witness  
H – Hold Point  
D – Documents Required  
V – Verify

Duty: QC – Quality Control  
F – Foreman  
P – Projects



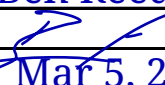
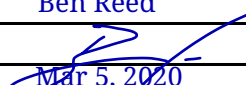


# Penetrant Test Report

<b>Foremost Job #:</b> W03-066732		<b>Tag Name:</b> 1000BBL Sales Tank - Sour Mods	
<b>Client:</b> Husky Oil		<b>Tag #:</b> N/A	
<b>Location:</b> FLW		<b>Tank Serial #:</b> 028328-2	
<b>Job Coordinator:</b> Braden Musyj		<b>Site Supervisor:</b> Dustin Henning	
<b>Location of Test:</b>			
Floor to Shell Seam: N/A		Horizontal Seam: N/A	
Non-Repadded Nozzles: X		Vertical Seam: N/A	
Other: <b>External nozzle flange to pipe welds</b>			
<b>Testing Instructions:</b>			
Penetrant to be Used: See below		Dwell Time: 4 Hours min.	
Ambient Conditions: Shop		Ambient Temperature: Shop	
Additional Requirements: Penetrant to be used is diesel or other suitable penetrant			
Nozzles tested: N18 nozzle flange to pipe welds; N17 nozzle flange to pipe welds and nozzle to shell weld.			
<b>Pre-Test Inspection:</b>			
Item to be tested to be visually checked for completion prior to testing.			
<b>Supervisor Sign-Off</b>		<b>Quality Control Sign-Off</b>	
Print: <i>Dorele Pandrea</i>		Print:	
Sign: <i>Dorele Pandrea</i>		Sign:	
Date: <i>MAR 04 5/2020</i>		Date:	
Comments:			
<b>Test Record:</b>			
Penetrant Used: <i>Diesel</i>		Date of Test: <i>MAR 5 / 2020</i>	
Dwell Time: <i>4 hours</i>		Time of Test:	
Result: <i>Good</i>			
Ambient Conditions: <i>Shop</i>		Ambient Temperature: <i>Shop</i>	
Comments:			
<b>Sign-Off</b>			
<b>Foremost Representative</b>		<b>Client Representative</b>	
Print: <i>Dorele Pandrea</i>		Print:	
Sign: <i>Dorele Pandrea</i>		Sign:	
Date: <i>MAR 5 / 2020</i>		Date:	



# Penetrant Test Report

<b>Foremost Job #:</b> W03-066732		<b>Tag Name:</b> 1000BBL Sales Tank - Sour Mods	
<b>Client:</b> Husky Oil		<b>Tag #:</b> N/A	
<b>Location:</b> FLW		<b>Tank Serial #:</b> 028328-4	
<b>Job Coordinator:</b> Braden Musyj		<b>Site Supervisor:</b> Dustin Henning	
<b>Location of Test:</b>			
Floor to Shell Seam: N/A		Horizontal Seam: N/A	
Non-Repadded Nozzles: X		Vertical Seam: N/A	
Other: <b>External nozzle flange to pipe welds</b>			
<b>Testing Instructions:</b>			
Penetrant to be Used: See below		Dwell Time: 4 Hours min.	
Ambient Conditions: Shop		Ambient Temperature: Shop	
Additional Requirements: Penetrant to be used is diesel or other suitable penetrant			
Nozzles tested: N18 nozzle flange to pipe welds; N17 nozzle flange to pipe welds and nozzle to shell weld.			
<b>Pre-Test Inspection:</b>			
Item to be tested to be visually checked for completion prior to testing.			
<b>Supervisor Sign-Off</b>		<b>Quality Control Sign-Off</b>	
Print:		Print: <b>Ben Reed</b>	
Sign:		Sign: 	
Date:		Date: <b>Mar 5, 2020</b>	
Comments:			
<b>Test Record:</b>			
Penetrant Used: <b>Lubriplate penetrating oil</b>		Date of Test: <b>Mar 5, 2020</b>	
Dwell Time: <b>4 hours</b>		Time of Test: <b>8:00 am</b>	
Result: <b>Pass</b>			
Ambient Conditions: <b>Shop</b>		Ambient Temperature: <b>Shop</b>	
Comments: <b>No leaks found</b>			
<b>Sign-Off</b>			
<b>Foremost Representative</b>		<b>Client Representative</b>	
Print: <b>Ben Reed</b>		Print:	
Sign: 		Sign:	
Date: <b>Mar 5, 2020</b>		Date:	



# Penetrant Test Report

<b>Foremost Job #:</b> W03-066732	<b>Tag Name:</b> 1000BBL Sales Tank - Sour Mods
<b>Client:</b> Husky Oil	<b>Tag #:</b> N/A
<b>Location:</b> FLW	<b>Tank Serial #:</b> 028328-2
<b>Job Coordinator:</b> Braden Musyj	<b>Site Supervisor:</b> Dustin Henning
<b>Location of Test:</b>	
Floor to Shell Seam: N/A	Horizontal Seam: N/A
Non-Repadded Nozzles: X	Vertical Seam: N/A
Other: <b>External nozzle flange to pipe welds</b>	
<b>Testing Instructions:</b>	
Penetrant to be Used: See below	Dwell Time: 4 Hours min.
Ambient Conditions: Shop	Ambient Temperature: Shop
Additional Requirements: Penetrant to be used is diesel or other suitable penetrant	
Nozzles tested: N14a & b, N16a-d - nozzle flange to pipe welds; N15 nozzle flange to pipe welds and nozzle to shell weld.	
<b>Pre-Test Inspection:</b>	
Item to be tested to be visually checked for completion prior to testing.	
<b>Supervisor Sign-Off</b>	<b>Quality Control Sign-Off</b>
Print: <b>Derek Pendree</b>	Print: <b>Danton Weston</b>
Sign:	Sign:
Date: <b>Mar 5, 2020</b>	Date: <b>Mar 5, 2020</b>
Comments:	
<b>Test Record:</b>	
Penetrant Used: <b>Lubriplate Penetrating Oil</b>	Date of Test: <b>Mar 5, 2020</b>
Dwell Time: <b>4 hours</b>	Time of Test: <b>7:30am - 11:30am</b>
Result: <b>Pass, no evidence of wicking</b>	
Ambient Conditions: <b>In shop</b>	Ambient Temperature: <b>15°C</b>
Comments:	
<b>Sign-Off</b>	
<b>Foremost Representative</b>	<b>Client Representative</b>
Print: <b>Danton Weston</b>	Print:
Sign:	Sign:
Date: <b>Mar 5, 2020</b>	Date:



# Penetrant Test Report

<b>Foremost Job #:</b> W03-066732		<b>Tag Name:</b> 1000BBL Sales Tank - Sour Mods	
<b>Client:</b> Husky Oil		<b>Tag #:</b> N/A	
<b>Location:</b> FLW		<b>Tank Serial #:</b> 028328-4	
<b>Job Coordinator:</b> Braden Musyj		<b>Site Supervisor:</b> Dustin Henning	
<b>Location of Test:</b>			
Floor to Shell Seam: N/A		Horizontal Seam: N/A	
Non-Repadded Nozzles: X		Vertical Seam: N/A	
Other: <b>External nozzle flange to pipe welds</b>			
<b>Testing Instructions:</b>			
Penetrant to be Used: See below		Dwell Time: 4 Hours min.	
Ambient Conditions: Shop		Ambient Temperature: Shop	
Additional Requirements: Penetrant to be used is diesel or other suitable penetrant			
Nozzles tested: N14a & b, N16a-d - nozzle flange to pipe welds; N15 nozzle flange to pipe welds and nozzle to shell weld.			
<b>Pre-Test Inspection:</b>			
Item to be tested to be visually checked for completion prior to testing.			
<b>Supervisor Sign-Off</b>		<b>Quality Control Sign-Off</b>	
Print: <b>Derek Pendree</b>		Print: <b>Danton Weston</b>	
Sign:		Sign:	
Date: <b>Mar 5, 2020</b>		Date: <b>Mar 5, 2020</b>	
Comments:			
<b>Test Record:</b>			
Penetrant Used: <b>Lubriplate Penetrating Oil</b>		Date of Test: <b>Mar 5, 2020</b>	
Dwell Time: <b>4 hours</b>		Time of Test: <b>7:30am - 11:30am</b>	
Result: <b>Pass, no evidence of wicking</b>			
Ambient Conditions: <b>In shop</b>		Ambient Temperature: <b>15°C</b>	
Comments:			
<b>Sign-Off</b>			
<b>Foremost Representative</b>		<b>Client Representative</b>	
Print: <b>Danton Weston</b>		Print:	
Sign:		Sign:	
Date: <b>Mar 5, 2020</b>		Date:	

[illegible]

[illegible]





## Insulating Report

FIF-QMR-68

Foremost Job #:	W03-066732-1	Tag Name:	1000 bbl
Client:	Husky	Tag #:	
Location:	FLW	Tank Serial #:	028328-2
Job Coordinator:	Braden M.	Site Supervisor:	Adair O'Grady

### Insulating


#### Chemical

Strokes	96	Res Batch#		Amount	13	Kgs
Thickness	Patch	Iso batch#		Amount	15	Kgs

#### Temperature

Hose	105	Prepping	Barry	Time	1
ISO	110	Prepping	Allen	Time	1
Resin	110	Prepping		Time	1
Tank	80				
AMB	80	Applicator	Barry	Time	1.5
Humidity	25%	Helper	Allen	Time	1.5
Pressure	1600				

### Sealing

Product	PSC 1050	Applicator	Barry	Time	1
Paint Name	Tankcoat	Helper	Allen	Time	1
Batch #					
Color	Black				
Amount	5 gals				
Q.C./Foreman Signature					
3rd Party Signature					
Comments					



## Insulating Report

FIF-QMR-68

Foremost Job #:	W03-066732-2	Tag Name:	1000 bbl
Client:	Husky	Tag #:	
Location:	FLW	Tank Serial #:	028328-4
Job Coordinator:	Braden M.	Site Supervisor:	Adair O'Grady

### Insulating


#### Chemical

Strokes	102	Res Batch#		Amount	14	Kgs
Thickness	Patch	Iso batch#		Amount	16	Kgs

#### Temperature

Hose	105	Prepping	Barry	Time	1
ISO	110	Prepping	Allen	Time	1
Resin	110	Prepping		Time	1
Tank	80				
AMB	80	Applicator	Barry	Time	1.5
Humidity	25%	Helper	Allen	Time	1.5
Pressure	1600				

### Sealing

Product	PSC 1050	Applicator	Barry	Time	1
Paint Name	Tankcoat	Helper	Allen	Time	1
Batch #					
Color	Black				
Amount	5 gals				
Q.C./Foreman Signature					
3rd Party Signature					
Comments					

## ABRASIVE BLASTING DATA

Foremost Job #:	603-666732-1	Tank Name:	1000 bbl.
Client:	Husky	Tag #:	
Location:	FLW	Tank Serial #:	028328-2
Job Coordinator:	Math Sims	Site Supervisor:	Adair O'Grady
Date:	April 9/20		
Blasted Area:	repair areas; nozzle tips internal.		

### STEEL CONTAMINANT TESTING:

SCAT Test Location:	Nitrate Levels:	Chloride Levels:	Sulphate Levels:	PH:

### ENVIRONMENTAL DATA:

START TIME	AMIENT TEMP.	RELATIVE HUMIDITY	DEW POINT	STEEL TEMP.
8 Am	-5.7°C	68%	-10.7°C	-5°C
END TIME	AMIENT TEMP.	RELATIVE HUMIDITY	DEW POINT	STEEL TEMP.
12pm	0.6°C	61%	-6.1°C	1°C

### SPECIFICATION STANDARD:

### TYPE AND GRADE OF ABRASIVE:

Internal:	Sp10	Starblast
External:		
Abrasive Checked for Cleanliness:		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Surface Conforms to SP 0178:		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

### BLOTTER TESTING:

Time:	7:30 Am	Clean and Dry:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Time:		Clean and Dry:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Time:		Clean and Dry:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Time:		Clean and Dry:	<input type="checkbox"/> Yes <input type="checkbox"/> No

### ANCHOR PROFILE MEASUREMENTS:

LOCATION / NOZZLE:	ANCHOR PROFILE:			DATE & TIME:	VERIFIED BY:
internal steel	3.1	2.9	3.2	April 13/20 8 am	JS

### TESTEX TAPE:

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### SIGN-OFF:

FOREMOST REPRESENTATIVE:		CLIENT REPRESENTATIVE:	
Print:	Jim German	Print:	
Sign:	<i>Jim German</i>	Sign:	
Date:	April 13/20	Date:	



## COATING DATA

Foremost Job #:	1003-066732-1	Tank Name:	1000661
Client:	Husky	Tag #:	
Location:	FLW	Tank Serial #:	028328-2
Job Coordinator:	Math Sims	Site Supervisor:	Adair O'Grady
Date:	April 13/20		
Application Area:	nozzles int.		

### PRODUCT INFORMATION:

Coat #:	Product Description:	Batch #:	Application Method:	Colour:
1	Devco 253 H5		roller	green
	A - VK16370H			
	B - VJ03850H			
	Devco 253 H5		roller	green
	A - VK16370H			
	B - VJ03850H			

### ENVIRONMENTAL DATA:

START TIME	AMIENT TEMP.	RELATIVE HUMIDITY	DEW POINT	STEEL TEMP.
(1) 1pm	21°C	12.2%	-9.3°C	20°C
END TIME	AMIENT TEMP.	RELATIVE HUMIDITY	DEW POINT	STEEL TEMP.
(2) 119m	23°C	15.1%	-4.9°C	24°C

### COATING THICKNESS MEASUREMENTS:

Coat #:	WFT Avg.:	DFT Avg.:	DFT Min.:	DFT Max.:	Defects:
1	8	6.4	3.9	10	
2	8	16.1	12.2	18	

### COMMENTS:

### SIGN-OFF:

Foremost Representative:	Client Representative:
Print: Tim Eorman	Print:
Sign: [Signature]	Sign:
Date: April 15/20	Date:



## COATING DATA

Foremost Job #: W03-066732-1		Tank Name: 1000 bbl.			
Client: Husky		Tag #:			
Location: F26		Tank Serial #: 028328-2			
Job Coordinator: Matt Sims		Site Supervisor: Adair O'Grady			
Date: April 13 / 20					
Application Area: clips + nozzles on internal shell					
<b>PRODUCT INFORMATION:</b>					
Coat #:	Product Description:	Batch #:	Application Method:	Colour:	
1	Dense 253 H5 A - UK16379AH B - VJ03856H		airless spray	green	
<b>ENVIRONMENTAL DATA:</b>					
START TIME	AMIENT TEMP.	RELATIVE HUMIDITY	DEW POINT	STEEL TEMP.	
1pm	21°C	12.2%	-9.3°C	20°C	
END TIME	AMIENT TEMP.	RELATIVE HUMIDITY	DEW POINT	STEEL TEMP.	
<b>COATING THICKNESS MEASUREMENTS:</b>					
Coat #:	WFT Avg.:	DFT Avg.:	DFT Min.:	DFT Max.:	Defects:
1	16	11.9	8.9	17.7	
<b>COMMENTS:</b>					
<b>SIGN-OFF:</b>					
Foremost Representative:			Client Representative:		
Print: Jim Gorman			Print:		
Sign: [Signature]			Sign:		
Date: April 15 / 20			Date:		

## COATING DATA

Foremost Job #: W03-066732-1		Tank Name: 10006h1.			
Client: Husky		Tag #:			
Location: FLW		Tank Serial #: 028328-2			
Job Coordinator: Matt Sims		Site Supervisor: Adair O'Grady			
Date: April 19 / 20					
Application Area: Floor + 1' of shell					
PRODUCT INFORMATION:					
Coat #:	Product Description:	Batch #:	Application Method:	Colour:	
1	Dermat III		airstream spray	grey	
	A - U68255UH				
	B - 4H0493UH				
ENVIRONMENTAL DATA:					
START TIME	AMIENT TEMP.	RELATIVE HUMIDITY	DEW POINT	STEEL TEMP.	
END TIME	AMIENT TEMP.	RELATIVE HUMIDITY	DEW POINT	STEEL TEMP.	
COATING THICKNESS MEASUREMENTS:					
Coat #:	WFT Avg.:	DFT Avg.:	DFT Min.:	DFT Max.:	Defects:
1	10	12	9	18	
COMMENTS:					
- Floor + 1' of shell were brush blasted before coating with Dermat III.					
SIGN-OFF:					
Foremost Representative:			Client Representative:		
Print: Jim German			Print:		
Sign: [Signature]			Sign:		
Date: April 15 / 20			Date:		





FIF-QMR-71

**HOLIDAY TESTING**

Foremost Job #:	W03-066731-3	Tank Name:	1000661
Client:	Husky	Tag #:	
Location:	FLW	Tank Serial #:	028328-2
Job Coordinator:	Matt Sims	Site Supervisor:	Adair O'Grady
<b>HOLIDAY TESTING EQUIPMENT:</b>			
Inspection Equipment Used:	2V Detector	Voltage Used:	67.5
Serial Number:	1007	Make / Model:	Tinker + Rexor
Calibration Date:	July 5/19		
<b>TESTING:</b>			
Specification:	SPD 188	Date & Time:	April 14, 15/20
Area Tested:	shell around nozzles + clips	No. of Holidays:	2
Area Tested:		No. of Holidays:	
Area Tested:	nozzles internal	No. of Holidays:	0
Area Tested:		No. of Holidays:	
Area Tested:	floor + 1' of shell	No. of Holidays:	4
Area Tested:		No. of Holidays:	
Area Tested:		No. of Holidays:	
Area Tested:		No. of Holidays:	
Cause of Holiday(s):	mechanical damage ; clips.		
<b>COMMENTS:</b>			
<b>SIGN-OFF:</b>			
Foremost Representative:		Client Representative:	
Print:	Jim German	Print:	
Sign:	[Signature]	Sign:	
Date:	April 16/20	Date:	



## ABRASIVE BLASTING DATA

Foremost Job #: <u>403-066732-X</u>		Tank Name: <u>1000bbl</u>		
Client: <u>Husky</u>		Tag #:		
Location: <u>F2W</u>		Tank Serial #: <u>028328-4</u>		
Job Coordinator:		Site Supervisor: <u>Adair O'Grady</u>		
Date: <u>May 5/20</u>				
Blasted Area: <u>Repair areas / nozzle</u>				
<b>STEEL CONTAMINANT TESTING:</b>				
SCAT Test Location:	Nitrate Levels:	Chloride Levels:	Sulphate Levels:	PH:
<b>ENVIRONMENTAL DATA:</b>				
START TIME	AMIENT TEMP.	RELATIVE HUMIDITY	DEW POINT	STEEL TEMP.
<u>8am</u>	<u>8°C</u>	<u>76%</u>	<u>4°C</u>	<u>10°C</u>
END TIME	AMIENT TEMP.	RELATIVE HUMIDITY	DEW POINT	STEEL TEMP.
<u>12noon</u>	<u>16.3°C</u>	<u>34%</u>	<u>0.6°C</u>	<u>18°C</u>
SPECIFICATION STANDARD:		TYPE AND GRADE OF ABRASIVE:		
Internal: <u>Sp5</u>		<u>Star 127</u>		
External:				

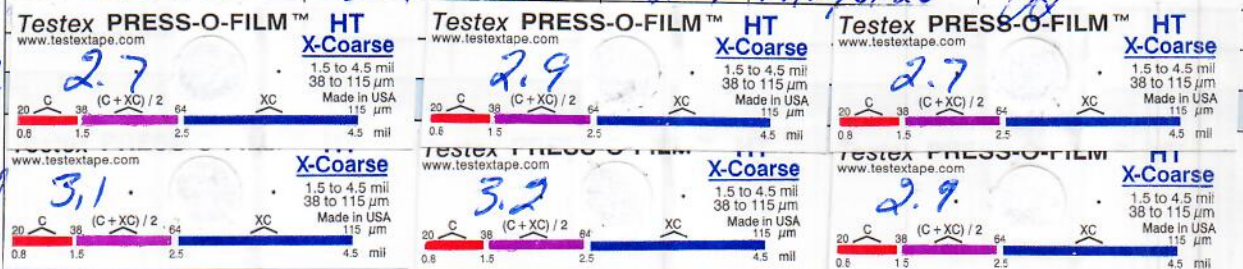
Abrasive Checked for Cleanliness: ☐ Yes ☒ No  
 Surface Conforms to SP 0178: ☒ Yes ☐ No

### BLOTTER TESTING:

Time: <u>7:30Am</u>	Clean and Dry:	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Time:	Clean and Dry:	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Time:	Clean and Dry:	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Time:	Clean and Dry:	<input type="checkbox"/> Yes	<input type="checkbox"/> No

### ANCHOR PROFILE MEASUREMENTS:

LOCATION / NOZZLE:	ANCHOR PROFILE:			DATE & TIME:	VERIFIED BY:
<u>shell</u>	<u>3.1</u>	<u>3.2</u>	<u>2.9</u>	<u>May 6/20</u>	<u>[Signature]</u>
<u>nozzle int.</u>	<u>2.7</u>	<u>2.9</u>	<u>2.7</u>	<u>May 6/20</u>	<u>[Signature]</u>



### SIGN-OFF:

FOREMOST REPRESENTATIVE:		CLIENT REPRESENTATIVE:	
Print: <u>Jim German</u>		Print:	
Sign: <u>[Signature]</u>		Sign:	
Date: <u>May 11/20</u>		Date:	



## COATING DATA

Foremost Job #:	203-066732-2	Tank Name:	1000661
Client:	Husky	Tag #:	
Location:	F/VW	Tank Serial #:	028328-4
Job Coordinator:		Site Supervisor:	Adair O'Grady
Date:	May 5/20		
Application Area:	repair areas shell/nozzles		

### PRODUCT INFORMATION:

Coat #:	Product Description:	Batch #:	Application Method:	Colour:
1	Devco 253 HS		airless spray	green
	A	U699494H		
	B	VJ03854A		

### ENVIRONMENTAL DATA:

START TIME	AMIENT TEMP.	RELATIVE HUMIDITY	DEW POINT	STEEL TEMP.
11AM	28°C	15%	-1.1°C	27°C
END TIME	AMIENT TEMP.	RELATIVE HUMIDITY	DEW POINT	STEEL TEMP.

### COATING THICKNESS MEASUREMENTS:

Coat #:	WFT Avg.:	DFT Avg.:	DFT Min.:	DFT Max.:	Defects:
1	15	12.4	10	18	

### COMMENTS:

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### SIGN-OFF:

Foremost Representative:	Client Representative:
Print: Jim German	Print:
Sign: [Signature]	Sign:
Date: May 11 2020	Date:

## COATING DATA

Foremost Job #:	1003-066732-2	Tank Name:	10006661
Client:	Husky	Tag #:	
Location:	F2W	Tank Serial #:	028328-4
Job Coordinator:		Site Supervisor:	Adair O'Grady
Date:	May 5/20; May 6/20		
Application Area:	nozzles internal		

### PRODUCT INFORMATION:

Coat #:	Product Description:	Batch #:	Application Method:	Colour:
1	Devco 253 HSA	4599494H	roller	green
		D- V503854H		
2	Devco 253 HS	4599494H	roller	green
		D- V503854H		

### ENVIRONMENTAL DATA:

	START TIME	AMIENT TEMP.	RELATIVE HUMIDITY	DEW POINT	STEEL TEMP.
(1)	11 AM	28°C	15%	-1.1°C	27°C
	END TIME	AMIENT TEMP.	RELATIVE HUMIDITY	DEW POINT	STEEL TEMP.
(2)	9 AM	25°C	14%	-4.4°C	26°C

### COATING THICKNESS MEASUREMENTS:

Coat #:	WFT Avg.:	DFT Avg.:	DFT Min.:	DFT Max.:	Defects:
1	10	9.1	4	11.1	
2	10	12.1	9	17.5	

### COMMENTS:

### SIGN-OFF:

Foremost Representative:		Client Representative:	
Print:	Jim Gorman	Print:	
Sign:	[Signature]	Sign:	
Date:	May 11/20	Date:	



## COATING DATA

Foremost Job #: 403-066732-2		Tank Name: 1000 bbl.			
Client: Husky		Tag #:			
Location: FLW		Tank Serial #: 028328-4			
Job Coordinator:		Site Supervisor: Adair O'Grady			
Date: May 6 / 20					
Application Area: Floor + 1' off shell					
PRODUCT INFORMATION:					
Coat #:	Product Description:	Batch #:	Application Method:	Colour:	
1	Demat III A-VS8255AH airless spray B-4H0493AH			gray	
ENVIRONMENTAL DATA:					
START TIME	AMIENT TEMP.	RELATIVE HUMIDITY	DEW POINT	STEEL TEMP.	
1pm	24°C	14%	-5.1°C	25°C	
END TIME	AMIENT TEMP.	RELATIVE HUMIDITY	DEW POINT	STEEL TEMP.	
COATING THICKNESS MEASUREMENTS:					
Coat #:	WFT Avg.:	DFT Avg.:	DFT Min.:	DFT Max.:	Defects:
1	10	22	18.8	27	
COMMENTS:					
SIGN-OFF:					
Foremost Representative:			Client Representative:		
Print: Tim Ferman			Print:		
Sign: [Signature]			Sign:		
Date: May 11 / 20			Date:		

## HOLIDAY TESTING

Foremost Job #:	403-066732-2	Tank Name:	1000661			
Client:	Husky	Tag #:				
Location:	FLW	Tank Serial #:	028328-4			
Job Coordinator:		Site Supervisor:	Adair O'Grady			
<b>HOLIDAY TESTING EQUIPMENT:</b>						
Inspection Equipment Used:	Low Voltage	Voltage Used:	62.5			
Serial Number:	1007	Make / Model:	Tinker & Razer			
Calibration Date:	July 5/19					
<b>TESTING:</b>						
Specification:	SPD 188	Date & Time:	May 17/20			
Area Tested:	shell areas	No. of Holidays:	2			
Area Tested:	nozzles internal	No. of Holidays:	0			
Area Tested:	Floor.	No. of Holidays:	3			
Area Tested:		No. of Holidays:				
Area Tested:		No. of Holidays:				
Area Tested:		No. of Holidays:				
Area Tested:		No. of Holidays:				
Area Tested:		No. of Holidays:				
Cause of Holiday(s):	underside of clips welds + debris on floor.					
<b>COMMENTS:</b>						
<b>SIGN-OFF:</b>						
Foremost Representative:		Client Representative:				
Print:	D. J. Terman	Print:				
Sign:	[Signature]	Sign:				
Date:	May 11/20	Date:				