

Husky Oil

STORAGE TANK INSPECTION REPORT

Asset # 222098 Equipment ID Description 400 BBL Produced Water Tank Manufacturer Nusco Code API-12F Modified Insulated PSV/V PSV ID # Location Size Inlet Outlet INS. The storage tank had previously been used as years. Operations intended to return the tank Compressor Station. There was no safety chain or bar present at the There were isolated areas of internal coating heating coil. Coating repairs were performed removed prior to the tank going into service. There were isolated areas of moss growing a RE The heating coil was to be removed prior to part of the tank growing along the bottom of prevent corrosion under the insulation. NONCONFORMAL	the top of the damage along the bottometring the tage of the tage top of the tage tage to tage to tage to tage to tage to tage tage to tage tage to tage tage tage tage tage tage tage tage	Asset To 006782 ter Sour CER DATA Capacity SCFM / Lbs/Hr / GPM MARY water tank and and use it for adder to the way and manway, om of the insuse it in the service of the way and manway, on the insuse it into service of the insuse in the service of the way and manway, on the insuse in the insus	Momt Internal Company Manufacturer Manufacturer	Model Service for at the Model	Last Service
Asset # 222098	Produced Wayes ACCUM BREAM Set Pressure PECTION SUM a produced into service the top of the damage alon on the shell ong the bottom of the service of the	Asset To 006782 ter Sour CER DATA Capacity SCFM / Lbs/Hr / GPM MARY water tank and and use it for adder to the way and manway, om of the insuse it in the service of the way and manway, on the insuse it into service of the insuse in the service of the way and manway, on the insuse in the insus	Momt Internal Commethanol storage walkway platform shell, manway combut the heating collation cladding.	Model Service for at the Model	Last Service or severa inehead
Manufacturer Nusco Code API-12F Modified Fluid Service Internal Access Yes Insulated PSV/V PSV ID # Location Size Inlet Outlet INS. The storage tank had previously been used as years. Operations intended to return the tank Compressor Station. There was no safety chain or bar present at the There were isolated areas of internal coating heating coil. Coating repairs were performed removed prior to the tank going into service. There were isolated areas of moss growing a RE The heating coil was to be removed prior to part of the tank going the bottom of prevent corrosion under the insulation. NONCONFORMAL	Produced Wayes ACCUM BREAT Set Pressure PECTION SUM a produced into service the top of the damage alond on the shell cong the bottom of the service of the damage alond on the shell cong the bottom of the service	ter Sour CER DATA Capacity SCFM / Lbs/Hr / GPM MARY water tank and and use it for adder to the water tank and manway, om of the insuse it into service the	Momt Internal Commethanol storage walkway platform shell, manway combut the heating collation cladding.	Model Service for at the Model	Last Service or severa inehead
Manufacturer Nusco Code API-12F Modified Fluid Service Insulated PSV/V PSV ID # Location Size Inlet Outlet INS. The storage tank had previously been used as years. Operations intended to return the tank Compressor Station. There was no safety chain or bar present at the There were isolated areas of internal coating heating coil. Coating repairs were performed removed prior to the tank going into service. There were isolated areas of moss growing a RETHE HEATING THE PROPERTY OF THE PROPER	PECTION SUM a produced into service te top of the damage alon on the shell ong the botto. COMMENDAT outting the tale top of the tale tale top of the tale tale tale tale tale tale tale tal	CER DATA Capacity SCFM / Lbs/Hr / GPM MARY water tank and and use it for adder to the water tank and manway, om of the insusemble of the service of the ser	Manufacturer d has been out of methanol storage valkway platform shell, manway co but the heating of the lation cladding.	Service for at the M	Last Service or severa inehead
Code API-12F Modified Insulated PSV / W	PECTION SUM a produced into service te top of the damage alon on the shell ong the botto. COMMENDAT outting the tale top of the tale tale top of the tale tale tale tale tale tale tale tal	CER DATA Capacity SCFM / Lbs/Hr / GPM MARY water tank and and use it for adder to the water tank and manway, om of the insusemble of the service of the ser	Manufacturer d has been out of methanol storage valkway platform shell, manway co but the heating of the lation cladding.	Service for at the M	Last Service or severa inehead
PSV ID # Location Size Inlet Outlet INS. The storage tank had previously been used as years. Operations intended to return the tank Compressor Station. There was no safety chain or bar present at the There were isolated areas of internal coating heating coil. Coating repairs were performed removed prior to the tank going into service. There were isolated areas of moss growing a REThe heating coil was to be removed prior to part A safety chain or bar should be installed at the All of the moss growing along the bottom of prevent corrosion under the insulation.	Set Pressure PECTION SUM a produced into service the top of the damage along on the shell the shell the service of the damage along the bottom of the shell the service of the service of the shell the shell the service of the shell the service of the shell th	Capacity SCFM / Lbs/Hr / GPM MARY water tank and and use it for adder to the water tank and manway, om of the insusemble of the insusemble of the service of the service of the service of the into service of the into service of the insusemble of	Manufacturer d has been out of methanol storage valkway platform shell, manway co but the heating of the lation cladding.	Service for at the M	Last Service or severa inehead
The storage tank had previously been used as years. Operations intended to return the tank Compressor Station. There was no safety chain or bar present at the There were isolated areas of internal coating heating coil. Coating repairs were performed removed prior to the tank going into service. There were isolated areas of moss growing a RETHE HEATING TO BAT SAFETY CONTROLL A SAFETY CHAIN OF BAT SHOULD BE INSTALLED TO BE IN THE STORY OF THE S	Set Pressure PECTION SUM a produced into service the top of the damage alon on the shell the shell cong the bottom on the bottom of the bottom of the tale top of the shell the top of the shell on the	Capacity SCFM / Lbs/Hr / GPM MARY water tank and and use it for adder to the water tank and manway, om of the insusemble of the insusemble of the service of the service of the service of the into service of the into service of the insusemble of	d has been out of methanol storage valkway platform shell, manway co but the heating of lation cladding.	service for at the M	Service or severa inehead
The storage tank had previously been used as years. Operations intended to return the tank Compressor Station. There was no safety chain or bar present at the There were isolated areas of internal coating heating coil. Coating repairs were performed removed prior to the tank going into service. There were isolated areas of moss growing a RETHE HEATING TO BAT SAFETY CONTROLL A SAFETY CHAIN OF BAT SHOULD BE INSTALLED TO BE IN THE STORY OF THE S	Set Pressure PECTION SUM a produced into service the top of the damage alon on the shell the shell cong the bottom on the bottom of the bottom of the tale top of the shell the top of the shell on the	Capacity SCFM / Lbs/Hr / GPM MARY water tank and and use it for adder to the water tank and manway, om of the insusemble of the insusemble of the service of the service of the service of the into service of the into service of the insusemble of	d has been out of methanol storage valkway platform shell, manway co but the heating of lation cladding.	service for at the M	Service or severa inehead
The storage tank had previously been used as years. Operations intended to return the tank Compressor Station. There was no safety chain or bar present at the There were isolated areas of internal coating heating coil. Coating repairs were performed removed prior to the tank going into service. There were isolated areas of moss growing a RETHE Heating coil was to be removed prior to part A safety chain or bar should be installed at the All of the moss growing along the bottom of prevent corrosion under the insulation.	a produced into service te top of the damage alon on the shell ong the bottom outling the tage top of the tage tage.	MARY water tank and and use it for adder to the water tank and adder to the water tank and manway, om of the insurance of the	d has been out of methanol storage valkway platform shell, manway co but the heating of lation cladding.	e at the M n. over and th	or severa inehead
The storage tank had previously been used as years. Operations intended to return the tank Compressor Station. There was no safety chain or bar present at the There were isolated areas of internal coating heating coil. Coating repairs were performed removed prior to the tank going into service. There were isolated areas of moss growing a RETHE HEATING THE HEATING THE HEATING THE THE HEATING THE HEA	a produced into service to the top of the damage alon on the shell ong the bottom of the fourting the tale top of the top	water tank and and use it for adder to the was the bottom s and manway, om of the insusum in the insusum in the into service the and into service and service and into service and servic	methanol storage valkway platform shell, manway cobut the heating elation cladding.	e at the M n. over and th	inehead
The storage tank had previously been used as years. Operations intended to return the tank Compressor Station. There was no safety chain or bar present at the There were isolated areas of internal coating heating coil. Coating repairs were performed removed prior to the tank going into service. There were isolated areas of moss growing a RETHE HEATTHEATTHEATTHEATTHEATTHEATTHEATT	a produced into service to the top of the damage alon on the shell ong the bottom of the fourting the tale top of the top	water tank and and use it for adder to the was the bottom s and manway, om of the insusum in the insusum in the into service the and into service and service and into service and servic	methanol storage valkway platform shell, manway cobut the heating elation cladding.	e at the M n. over and th	inehead
years. Operations intended to return the tank Compressor Station. There was no safety chain or bar present at the There were isolated areas of internal coating heating coil. Coating repairs were performed removed prior to the tank going into service. There were isolated areas of moss growing a RETHE HEATING THE RESEARCH THE HEATING THE RESEARCH THE MEATING THE THE MEATING TH	the top of the damage along the bottometring the tage of the tage top of the tage tage to tage to tage to tage to tage to tage tage to tage tage to tage tage tage tage tage tage tage tage	and use it for adder to the was the bottom so and manway, om of the insusuous ink into service	methanol storage valkway platform shell, manway cobut the heating elation cladding.	e at the M n. over and th	inehead
The heating coil was to be removed prior to part of the most growing along the bottom of prevent corrosion under the insulation.	ecommendate outting the tage top of the	<i>IONS</i> nk into service			
The heating coil was to be removed prior to part A safety chain or bar should be installed at the All of the moss growing along the bottom of prevent corrosion under the insulation. **NONCONFORMAL**	outting the ta	nk into service	e.		
A safety chain or bar should be installed at the All of the moss growing along the bottom of prevent corrosion under the insulation. **NONCONFORMAL**	e top of the		e.		
All of the moss growing along the bottom of prevent corrosion under the insulation. **NONCONFORMAL**		oof access lac			
prevent corrosion under the insulation. NONCONFORMAN	the insulatio				
		n cladding sho	ould be removed	in order to	o help
	ICES / INSPEC	TION DEFICIEN	ICIES		
INS	PECTION PLA	NNING			
Inspection Strategy Availability			Inspection Interval	5	un
Inspection Date Sept. 19, 2012 Date of Last	nspect		Date of Next Inspect	9-	18-20
	PORT CERTIFIC		M. 41	41	
The signatures below certify that inspections/tests have the specified equipment is considered fit for service un inspected by Adam Fitzs	il the date of ne	kt inspection.			egy and th
Addit Fitz	,craid	men of	-	Data	
Reviewed and Approved by Criticality Assessment Rerun	gerald Man 71600		4 -1 1101	13	-18-21
Assessed Next Inspection Date		Inspection Pla	anning Rerun		

Detailed Inspection Visual External

ID	General	Condition
T1	Other (please explain)	☐ Good ☐ Fair ☐ Poor ☐ N/A
Opera	ations stated that all of the external pipi	ng would be replaced prior to putting the tank into service.
T2	Corrosion	Good Fair Poor N/A
T3	Leaks	No Yes
-		group promit
T4	Vibration	No Yes
T5	Dissimilar Flange Rating	No ☐ Yes
PMI C	7 17 101 1	Cont No.
Т6	Ladder/Stairway	Good Fair Poor N/A
		n, but there was no safety chain or bar located at the top of the ladder. Good Fair Poor N/A
T7	Platform	Good Fair Pool NA
T8	Electrical Ground	Good Fair Poor N/A
10	Electrical Ground	Good Tail Tool TWA
T9	Cathodic Protection	Good Fair Poor N/A
		they both appeared to be properly installed.
T10	Painted Inactive Corrosion	Good Fair Poor N/A
110	I amteu maetive Corrosion	0000 161 1001 1001
T11	Coating/Painting	Good Fair Poor N/A
111	Courting a mineral	
T12	Level Gauge	Good Fair Poor N/A
T13	Bottom	Good Fair Poor N/A
The t	ank has a double floor.	
T14	Secondary Containment	Good Fair Poor N/A
T15	Shell	Good Fair Poor N/A
	ank is double walled	
T16	Roof	Good Fair Poor N/A
T17	Agitator/Mixer	Good Fair Poor N/A
T18	Jacket	Good Fair Poor N/A
ID	Supports	Condition
T31	Other (please explain)	Good Fair Poor N/A
	ank is welded to a metal skid that is we	
T32	Foundation	Good Fair Poor N/A
102	A VARIABLEDIA	<u> </u>
T33	Anchor Bolts	☐ Good ☐ Fair ☐ Poor ☒ N/A
T34	Windgirders	☐ Good ☐ Fair ☐ Poor ☒ N/A
	116 CT	

SUMMIT Inspection Services Ltd.

ID	Connections	Condition
T41	Other (please explain)	Good Fair Poor N/A
T42	Small Branches	☐ Good ☐ Fair ☐ Poor ☒ N/A
	731	
T43	Nozzles	Good Fair Poor N/A
T44	Swing Lines	☐ Good ☐ Fair ☐ Poor ☒ N/A
T45	Manways/Hatches	Good Fair Poor N/A
T46	Reinforcing Pads	Good Fair Poor N/A
T47	Inadequate Thread	☐ Good ☐ Fair ☐ Poor ☒ N/A
	Engagement	
T48	Dolting	Good Fair Poor N/A
140	Bolting	
T50	Flanges	Good Fair Poor N/A
130	Flanges	
T51	Leak Clamps	Good Fair Poor N/A
101	Lean Clambs	
	Insulation	Condition
T61	Other (please explain)	Good Fair Poor N/A
		New York Control of the Control of t
T62	Damage	☐ Good ☐ Fair ☐ Poor ☒ N/A
	W 807	
T63	Penetrations	Good Fair Poor N/A
T64	Jacket	Good Fair Poor N/A
T65	Banding	Good Fair Poor N/A
		M.C. IND.: Dr. NA
T66	Seals/Joints	Good Fair Poor N/A
	Relief Device	Condition
T-71		Good Fair Poor N/A
T71	Other (please explain)	nk that appeared to be in good condition, but there was limited access to
	meplate information.	ink that appeared to be in good condition, but there was infined access to
T72	Corrosion	☐ Good ⊠ N/A
1. 1 da	COLIOSION	
T73	Leaks	☐ Good ☑ N/A
T74	Restricted Inlet/Outlet	☐ Good ☑ N/A

Report 000961-11 Page **4** of **11**

Detailed Inspection Visual Internal

ID	General	Condition
V1	Other (please explain)	Good Fair Poor N/A
V2	Corrosion	Good Fair Poor N/A
V3	Erosion	Good Fair Poor N/A
V4	Distortion	Good Fair Poor N/A
	l mu	Contract Draw NI/A
V5	Blisters	Good Fair Poor N/A
***	D	Good Fair Poor N/A
V6	Deposits	
		on the shell, but overall the tank was very clean.
V7	Welds	Good Fair Poor N/A
¥70	TAT I	Good Fair Poor N/A
V8	Nozzles	Good Fair Poor N/A
370	CL .II	Good Fair Poor N/A
V9	Shell	Oood Fair Pool NA
¥74.0	D C	Good Fair Poor N/A
V10	Roof	Occupian Front NA
V21	Internals Other (Please explain)	Good X Fair Poor N/A
Thora	were two internal angles present wit	h approximately 50% remaining at the time of inspection.
V22	Annular Ring	Good Fair Poor N/A
V La La	Annulai King	
V23	Sump	Good Fair Poor N/A
720	Sum y	
V24	Roof Support	Good Fair Poor N/A
	22001.040.000	
V25	Thermowells	Good Fair Poor N/A
V26	Metallic Linings	☐ Good ☐ Fair ☐ Poor ☒ N/A
V27	Nonmetallic Linings	Good Fair Poor N/A
Coati	ing repairs were performed at the time	of inspection in isolated areas of coating damage along the bottom
shell,	manway cover and flanges. Coating	damage on the heating coil was not repaired since the coil was to be
	ved prior to putting the tan into service	2.
V28	Internal Steam Coil or Other	Good Fair Poor N/A
	Piping	
The o		but was to be removed prior to putting the tank into service.
V29	Level Gauge	Good Fair Poor N/A
V30	Other Welded Attachments	Good Fair Poor N/A
T11	Floor	Good Fair Poor N/A

UT Measurements on Bottom Shell Course

UT thickness measurements were taken internally (the tank is double walled) along the bottom shell at four equally spaced locations. The test locations consisted of 12 points, equally spaced over a vertical 18" band. The following table displays the results of the thickness measurements.

Reading	North	East	South	West
1	0.218"	0.209"	0.212"	0.216"
2	0.210"	0.207"	0.210"	0.221"
3	0.206"	0.208"	0.213"	0.219"
4	0.204"	0.210"	0.212"	0.220"
5	0.208"	0.209"	0.218"	0.220"
6	0.214"	0.211"	0.219"	0.220"
7	0.215"	0.214"	0.216"	0.224"
8	0.213"	0.216"	0.215"	0.222"
9	0.215"	0.218"	0.216"	0.217"
10	0.213"	0.220"	0.217"	0.220"
11	0.211"	0.220"	0.218"	0.217"
12	0.211"	0.218"	0.217"	0.205"
Min.	0.204" 0.206" 0		0.207"	0.205"

Nominal Shell Thickness is 0.188" UT readings include the coating thickness

UT on Tank Floor

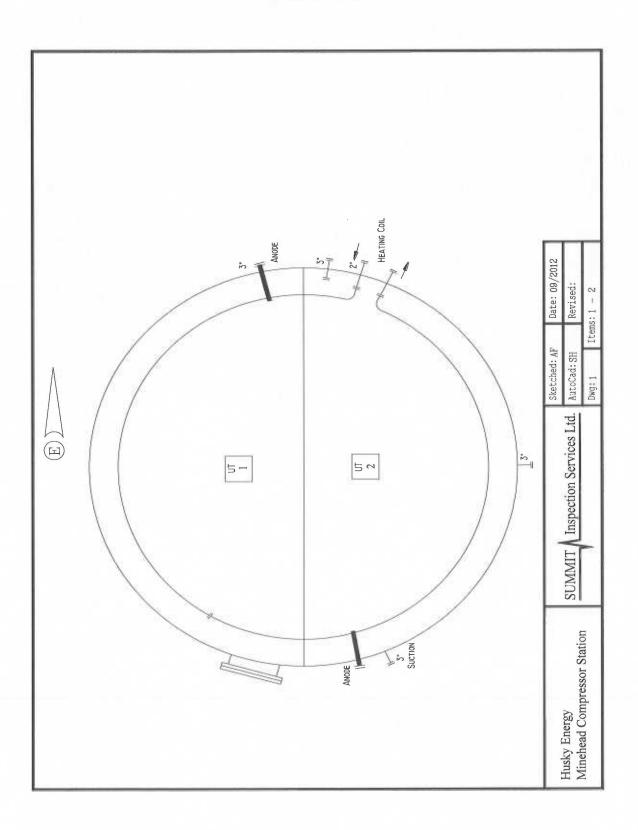
UT thickness scans were performed on each of the internal floor plates (there is a double floor). Each scanned area was approximately 12" x 12", with an average and minimum thickness recorded for each area. Please refer to the attached floor map for the location of each test area.

Location#	1	2		
Average	0.280"	0.285"		
Min.	0.274"	0.276"		

Nominal Floor Thickness is 0.250" UT readings include the coating thickness

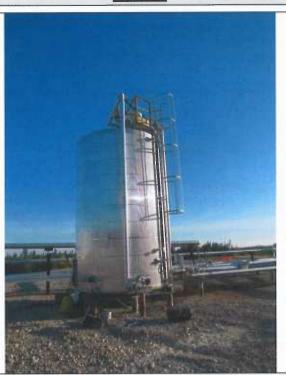
Report 000961-11 Page **6** of **11**

Floor Panel Design

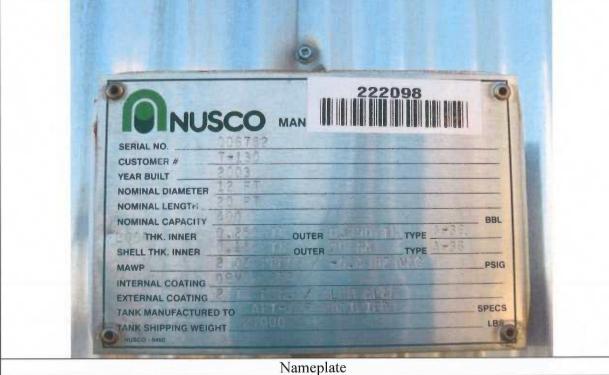


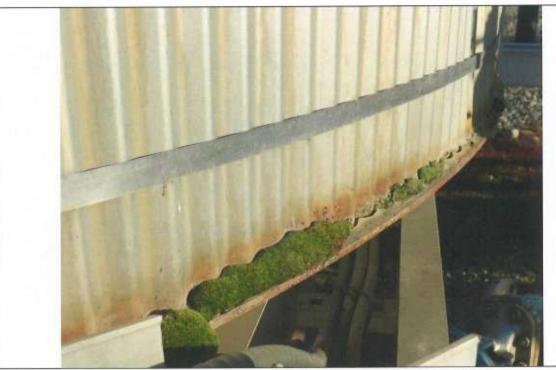
Report 000961-11 Page **7** of **11**

Pictures



General external view of the storage tank





Areas of moss growing along the bottom of the insulation cladding



Internal anode



General internal view of the floor and lower shell



Isolated areas of coating damage along the bottom shell

Report 000961-11 Page **10** of **11**



Internal overflow piping



General view of the tank support system

Case I I		Cover Pa	ige – Atmo	spheric	Storage T	ank		
Client:					ction Date:			
Facility:		Minehead Compressor Station				14-06-049-18 W5M		
Requested By:					#:	006782		
Equipment:	400 BBL Produced Water Tank (Surplus)							
Equipment	100 BB21							
		7		tatus			☐ Not At location	
☐ In Service ☐ Standby								
		Type of	Inspection				SISL Technique	
☑ Visual External ☑ Visual Internal ☐ Firetube							SISL-19	
☐ Installation		Coating		☐ Corrosio	Corrosion Survey			
NDT		Repair		Other				
Technicians/l	nenectors			(Certification	ns		
Adam Fitzgerald	HSDCCt015	API-653	# 37313	CGSB UT-II#				
Adam Fitzgeraid		A11-055	API-653# 37313 CGS)D 01-11# 15474			
			Tec	hnique				
□ BR □ CN	CP E	T MT	□ PR □	PT RT			☑ VE ☑ VI ☐ Other	
UT (thickness)		MPI (dry powo		Visual (externa			ible aqueous)	
UT (shearwave)		MPI (wet fluor	,	Visual (interna			ible post emulsifiable)	
UT (c-scan)		MPI (wet visib		Hardness (mic Hardness (tele			sible solvent removable) orescent water washable)	
UT (TOFD)		RVT Holiday Detect		Chemical Etch	/		orescent post emulsifiable)	
UT (phased array Automated UT		MFL Floor Sca		Weld Joint Va			orescent solvent removable)	
					-	onsun	nahles	
TIL.	Equipme		lautiala	Magnetic P		onsun	Liquid Penetrant	
Ultrasonic Magnetic Particle Magnetic ☑ DMS-2 ☐ AC Yoke ☐ Magnetic					ux 7HF (black)		SKL-WP Penetrant	
USN-52L		DC Yok		Magnafl	ux WCP-2 Cont	rast Pain	t SKD-S2 Developer	
USN-58L Permanent Yoke Magna					ux 14AM Fluor	escent Ba	ath SKC-S Cleaner	
USN-Phaser		☐ Blacklig	ht	Red Oxi			DP-51 Penetrant	
☐ Westdyne Intrasp	ec 4			Grey Ox	ide Powder		DR-62 Developer	
Other		Other		Other	Other Chemical Solution ☐ Devoe 142C			
Tinker Rasor Hol	iday Detector	☐ RVT XI		Nital Ch	emical Solution		Devoe 142C	
MFE 4020 MKII								
D		ric Transduce	Diameter	Angle	Code:		Code ASME V	
Description FH2E	Type Dual	Frequency 7.5 MHz	.380"	0 degrees	Acc. Criteri		API-653	
THEL	Duai	7.5 IVII 2	.500	o degrees	Calibration		.100"500" Stepwedge	
					Sensitivity:		BWR @ 80% FSH	
							C. 1.	
Made de la	Magi	netic Particle			Code:	T	Code	
Material: Surface:					Acc. Criteri	a:		
Technique:					AC Yoke:			
Lighting:					Calibration	:		
anna!			6					
				nments:				
						PI-653	inspection was requested	
for the tank. Ple	ase refer to the	ne report for	the details of	the inspect	ion.			
(7)								
	10. 21	-27						
Signature:	In Ffg	dill			Date:	October	29, 2012	
	Adam Fitz				_			