308

Q200506060007

. F

1

Scientific Notebook No. 578: Department of Energy (DOE) Alloy 22 Repassivation Tests -Continuation of Scientific Notebook No. 540 (08/08/2002 through 04/03/2003)

- - -

LABORATORY NOTEBOOK

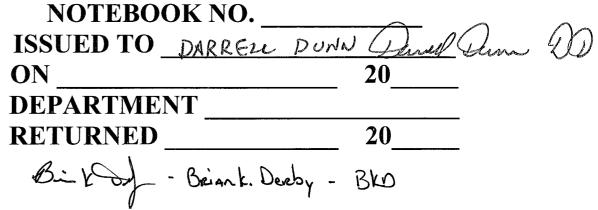
CNWRA/SwRI

CNWRA CONTROLLED COPY 578

NOTEBOOK NO. ON _____ DEPARTMENT





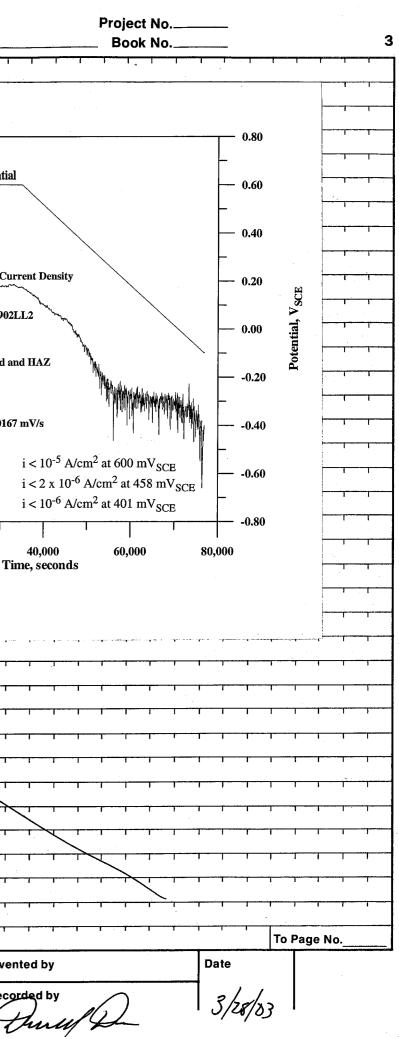


SCIENTIFIC NOTEBOOK COMPANY **2831 LAWRENCE AVENUE STEVENSVILLE, MICHIGAN 49127** (800) 537-3028 - http://www.snco.com

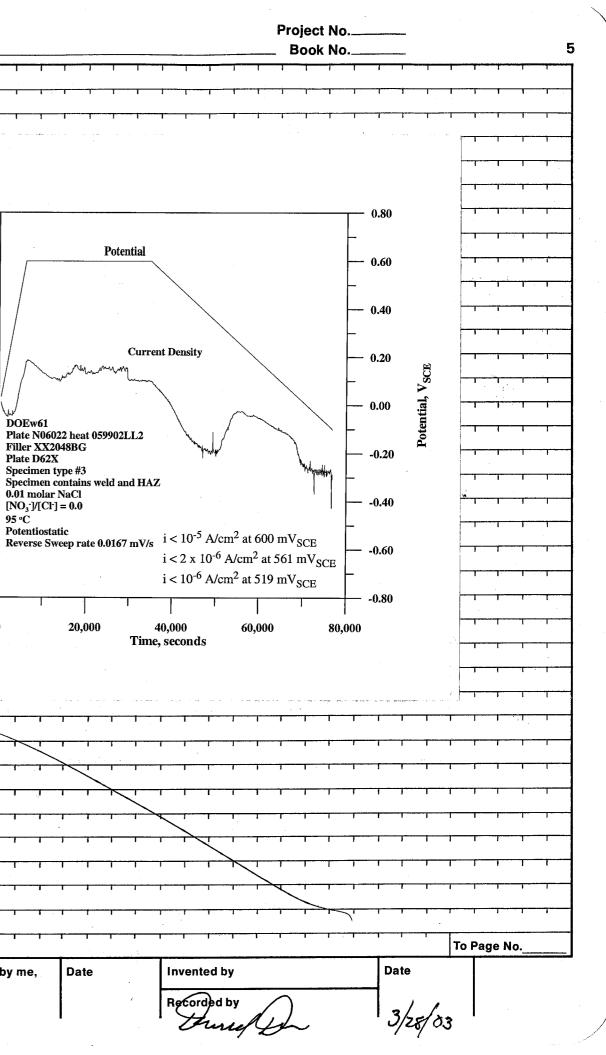
Project No... Book No. From Page No. Continues Testing from Notebook Initial Scientific Notebook Entry for Department of Energy Alloy 22 Localized Corrosion Resistance Tests Title: DOE Alloy 22 Repassivation Tests. Tests Preformed by: Darrell S. Dunn, Div 20; Brian Derby, Div. 18 **Objectives:** Determine the effect of fabrication processes on the localized corrosion susceptibility of Alloy 22. Equipment: Laboratory oven for exposure of test specimens at 600 to 1125 °C. Thermocouple and thermocouple meter. Keithley 614/617. Solartron 1287 Potentiostat and CorrView Software or equivalent, Electrochemical test cell. Materials: Base alloy: Alloy N06022 Alleghany Ludlum heat 059902LL2 welded (GTAW) using Inco Alloys 622 heat XX2048BG filler. Other materials and heats to be added and identified prior to testing. Specimen specifications: Specimens will be equivalent to 20.01402.571.006 rev. 1 unless otherwise specified. Location of specimens with respect to weld will be identified. Measurement Parameters: Temperature and time of exposure, Potential and Current of specimen during test. Required level of accuracy: Temperature of thermal exposure \pm 10 °C Temperature during corrosion tests ± 2 °C, Time of exposure ± 1 minute, Potentials ± 1 mV, Current ± 0.1 microamp. Uncertainty and Sources of Error: Current measurement error can occur for localized corrosion processes because the actively corroding area is not the same as the surface area of the test specimen. To Page No. Witnessed & Understood by me, Date Invented by Date Recorded by

Project No._ 2 Book No._ TITLE From Page No. Potenti REPASSINA Alloy C-22 Ob Jer DOZ Alloy Allea N06022-Specimen s m 05990211 fillen-XX 204856 Specime- Type 3 622 heat plo Material 600 Grit polishes Fini • Chri Attaches キ Pas A+ 50 In-07 Usia 6104 Was 34.31025 Stan 34.30972 Enc Sol 0.001 M Nuc 0.119 No.CI Lot# 027878 + DI wola To 2000 2000 Fishen OH Stor 5.832 Hecunct 950 SNE # ρH Eno 70 2291257 P 41108 F<u>lec</u> PT Fb. 10000 5~# Reterenc Fishe 13-620-52 6249092 498-170 H Tempera 98 Thermomi Econ SNT -337mu 614 1015/26 + 340 m <u>nue</u> Solot. 99.999 Desega 60 1/24 Examination: No Crevice Connosion feet Crevice Specimon WAShe Surfaces of mile stringing of facial Sper To Page No. DATS DOF-W60 Witnessed & Understood by me, Date Invented by Date **Recorded by** 3/27/03 Bi

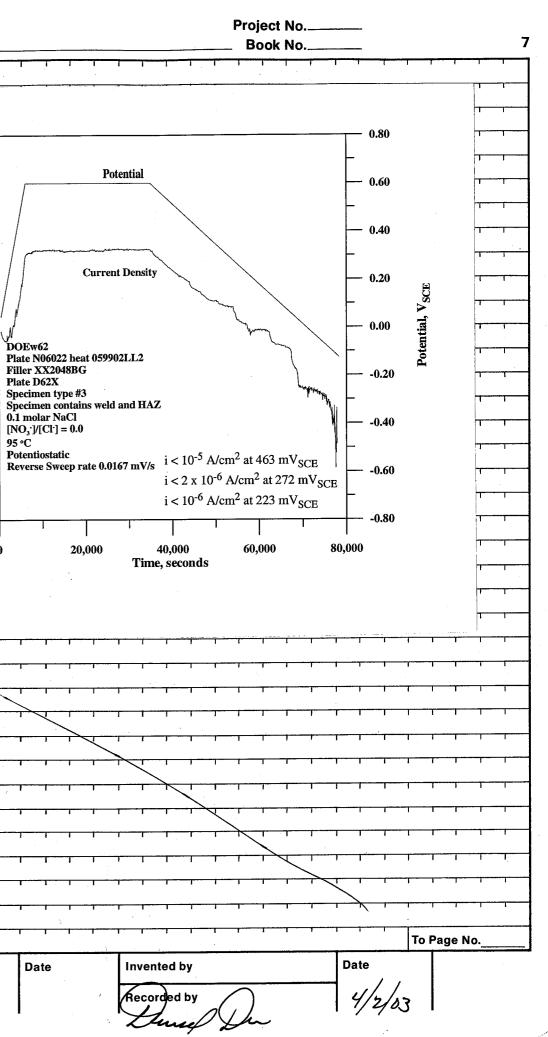
From Page No.	_	1-	-1-	· ·	• • •	'	
1 1 1							
1 1		10 ⁻²	-	·······			
		10 ⁻³	_	ſ		Poter	ntial
<u> </u>				/			
		1014		/			
······································	- 1	10 ⁻⁴	·	/			
	Current Density, A/cm ²						C
	V	10 ⁻⁵	-	1	and the second		Curr
	ity,			DOEw Plate I	760 N06022 he	eat 059	902LI
	ensi	10 ⁻⁶	_	Filler	XX2048B	G	0211
	ţ D		ľ	Plate I	nen type # nen conta	#3	
 	ren	10 ⁻⁷		0.001 1	molar Na(CI	d and
	Cur	10		[NO₃`] 95 °C	/[Cl [·]] = 0.0	0	
	Ŭ	0		Potent	iostatic		1/7 -
		10 ⁻⁸		Kever	se Sweep 1	rate 0.0	J10/ I
							-
		10 ⁻⁹	-				
<u> </u>							•
		10 ⁻¹⁰	\dashv				
				·	20.00		•
			0		20,00	U	Tim
<u> </u>							
	• •• •		• • •	• • • •		· • •	• ····
<u> </u>	1 1	- 1	· · · ·		1 1		1
<u> </u>			.		· · · · · ·	1	1
	-1-1-		र				T
					1 1	- 1	- <u>r</u>
	- 			\rightarrow		- 1	- -
	1-1	, r	ſ		1 1		\
	1 1	1		1 1	1 1	- T	1
	- 		1	11	· · · · ·	1	
 	1 1				1 1	1	-1
	1 1			- 1 , 1 ,	1 1		<u>,</u>
	1 1			- <u>, 1 1</u>	- TT		
<u> </u>				- 1 - 1 - : :		· · · ·	
				-	· 2 (
Witnessed & Unde	rstood	by me	,	Date		In	vent
-							ecor
				1		1	للان



Project No._ Book No.__ TITLE TITLE. Alla Repassiva Þ From Page No. From Page No. C-2 # Objectiv See Pð Allow Alley Specimen DOF N06022 0599626 Al Sneuman 122 XX 2NIFBU pe 3 10⁻² $\zeta_{\omega 2}$ Materia GRit 2 600 polishes Proto Car Atta 50 Potential vice LUAS T 10⁻³ -<u>5</u>~# 3/6/02 139072 Ove 9 16102 10⁻⁴ 33.96390 Genic Start 1 = SANTOR, OUS 1250 9099 A/cm² 33.96217 Eno ut 10⁻⁵ rrent Density, Solution 0.01 m NuC 10⁻⁶ Lot # 027878 N.Cl 170. DOEw61 Plate N06022 heat 059902LL2 Filler XX2048BG + 0+ 7.000 . 10-7 Plate D62X Specimen type #3 Specimen contains weld and HAZ HQ star 5.715 0.01 molar NaCl [NO₃⁻]/[Cl⁻] = 0.0 95 °C 950 m 10⁻⁸ 241257 Potentiostatic 10⁻⁹ <u>s</u>nt -# More G 16120 10-10 \wedge DY Fla DVI 20,000 SN# Q. 13-620-52 Fishe 625-1439 Cal Thermon Tra 60.387 5/10/07 OUL 5/4/03 Ecom 64 - 311 mu SN 5 N704624 5/26/03 +87~ Ove 0 Sh 99.999 JAI DATE Specimen Examina Crevice Concosion Crevice worke stain m DATA DUE_W61 To Page No. Date Invented by Date Witnessed & Understood by me, Witnessed & Understood by me, Date 3/07/03 **Recorded by** Å:



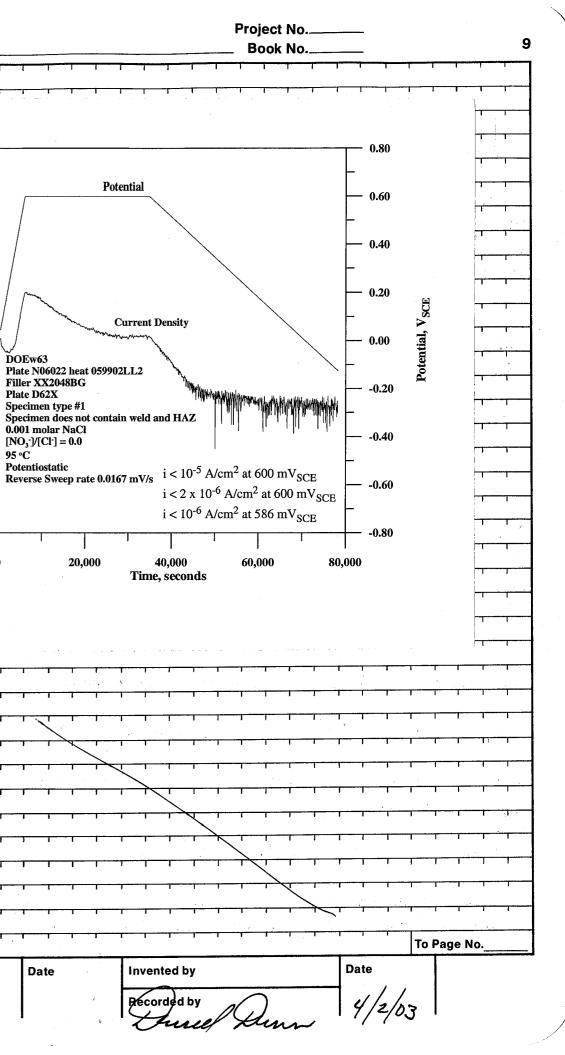
Project No. 6 Book No. TITLE TITLE. Poter Ò Alloy C-22 From Page No. From Page No. - DASSIVAtion 4 objective SAME P 10⁻² Allenhann Alloy DOE Specipe NO6022. 059902LL2 10⁻³ 2 622 Specimon Fac 2048 RG Coo **₽**Ţ*FF* Ŧ Mat 600 Gat Q_Q_1 shep INA 10⁻⁴ Crevice Attac 3967 *inshers* A/cm² Co 10⁻⁵ Density, 34.03725 Sta 11/15/02 12809099 10⁻⁶ 34.03195 F. DOEw62 Plate N06022 heat 059902LL2 Filler XX2048BG rrent 10⁻⁷ Plate D62X Specimen type #3 Specimen contains weld and HAZ 0.1 molar NaCl 50 0.1 M 5 N Jac 1+ # 027878 11.6914 + DI Nacl 10⁻⁸ $[NO_3]/[Cl] = 0.0$ water To 20000 95 °C Potentiostatic 10-9 +: 5.983 4 ۵ ۱ 950 Ħ SN#2291257 286 ٥H Drobe 13-620-296 ρ Q 10⁻¹⁰ SN#41108 YG more 6 ρ DUO 5N# Reteres. 0249097 13 . 620.52 Fish £ Temperas 5 614 Econn -512-5704934 Est = +95m 0, Solut 99.999 N Dipenate Specime Framination upsin onnosion Staining 600 To Page No. DOE-W62 Daya Witnessed & Understood by me, Date/ Witnessed & Understood by me, Date Date Invented by 4/1/03 Recorded by



Potential

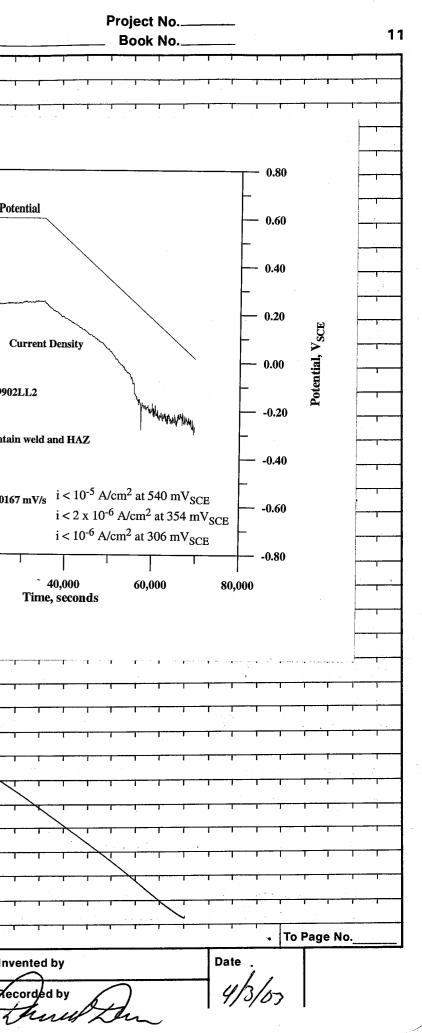
20,000

Project No. 8 Book No.__ TITLE TITLE. Repassivation Potes From Page No. Alloy C-22 From Page No. Ŧ obJec UO 10⁻² Alleyhany N06022-Alley Specimen DOE Heat 059902U . 10 10⁻³ XX 204886 filler -Inco Allon Mig 622 Specimen Doesn? Materio Gart PTFF Certice Can 600 10⁻⁴ Peto 6104 5N# 139072 washers Joi AS Current Density, A/cm² 10⁻⁵ en# 12809099 Sta 34.17980 34. 179750 +: Ego 10⁻⁶ DOEw63 Solution Plate N06022 heat 059902LL2 Filler XX2048BG 0.001 M NuC 10-7 Lof # 027578 D. 119. NUCL Plate D62X 79 + 2000 0 0.001 molar NaCl [NO₃⁻]/[Cl⁻] = 0.0 10⁻⁸ 95 °C pHg Stan 3340 Fishen Potentiostatic 9.50 ମ୍ୟ SN 100 Reverse Sweep rate 0.0167 mV/s - 1 10-9 #-13-620-296 sut 'nΗ 2291257 P 10⁻¹⁰ SNOT I 10120 Qo. 20,000 Coun Fla Reterence SNI F.she 13-620-52 6751420 1emperor 00 hundre Ke:th Econ 474m รณ์ 5 0764974 Ç0 1261 93 501 99. .999 Deserstes 0/24 Specim N. Framination 104 ALISIAN Surface Stainin m/2 DOF_W63 To Page No. DAAA Witnessed & Understood by me, Date Invented by Date Witnessed & Understood by me, Date 4 Recorded by /65



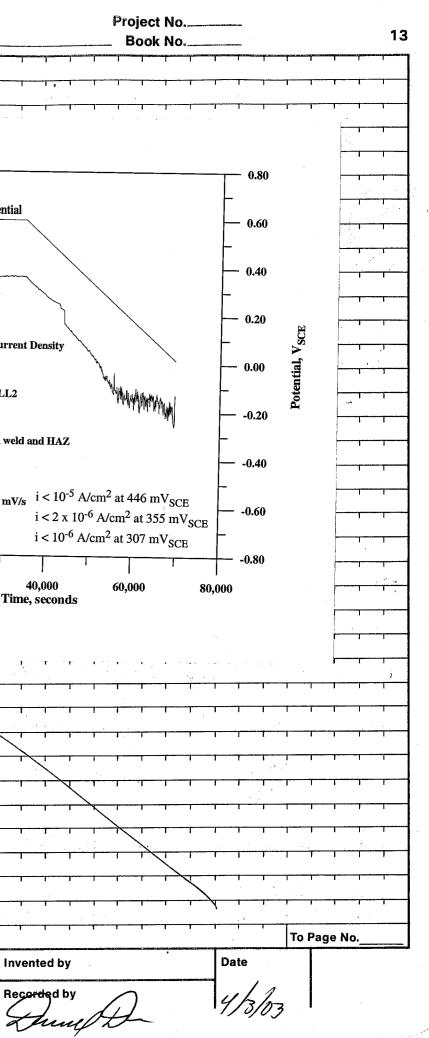
Project No.__ 10 Book No._ TITLE From Page No. Potential Repassivation 40 Alloy 0-22 Ay FI ObJec SAME Allegh Allow DOE Specime No6022-Hest 059992662 An Specimer Row 2 Inco 622 head XK2048BG fillen -100 1 TOP - with Docen Finish 2 PTFF Materi Get polishes 600 inshers Attached SN# # 6104 Proto Carvie 139072 Due Ca 9/6/07 34.23934 stan Genivs SARtonious 12809099 SN 34.23847 Enc Kulo2 o. Din Nucl 1. 171 , Nocl 401 # 027878 + PI unter To 2000 ml 20000 SW 3340 pH start 6.168 Fishen 850 met 5x# 2291257 PI 'PH 6.86 . 820 Eno = # <u>27</u>, Ht, E6+ 6 morel 4100 Co PT Flo 50 # 02 49197 Retere -670-52 N# H98-170 Ca 950 5/10/02 DUL S Semocra Thermome 50 th Econ : keith le 614 5 -415m. 0704934 FAT 597 99.999 /0N Solit Deserati 1/24 feet of Examination : No Chevice Connoglan Carrice work Spermu milo stainin +:.+ ς, Secumen DOE- WEH To Page No. Data Witnessed & Understood by me, Date Invented by Date 4/3/03 Recorded by

Current Density, A/cm ²	10^{-2} - 10^{-3} - 10^{-4} - 10^{-5} - 10^{-6} - 10^{-7} - 10^{-8} -	Filler XX2 Plate D62X Specimen t	122 heat 0599 048BG K type #1 does not cont NaCl	Curren 002LL2
	10^{-2} - 10^{-3} - 10^{-4} - 10^{-5} - 10^{-6} - 10^{-7} -	DOEw64 Plate N060 Filler XX2 Plate D62X Specimen t Specimen t Specimen t	122 heat 0599 048BG K type #1 does not cont NaCl	Curren 002LL2
Current Density, A/cm ²	10^{-3} - 10^{-4} - 10^{-5} - 10^{-6} - 10^{-7} -	Plate N060 Filler XX2 Plate D62X Specimen t Specimen c 0.01 molar [NO ₃ ⁻]/[Cl ⁻]	122 heat 0599 048BG K type #1 does not cont NaCl	
Current Density, A/cm ²	10^{-3} - 10^{-4} - 10^{-5} - 10^{-6} - 10^{-7} -	Plate N060 Filler XX2 Plate D62X Specimen t Specimen c 0.01 molar [NO ₃ ⁻]/[Cl ⁻]	122 heat 0599 048BG K type #1 does not cont NaCl	Curren 002LL2
Current Density, A/cm ²	10^{-3} - 10^{-4} - 10^{-5} - 10^{-6} - 10^{-7} -	Plate N060 Filler XX2 Plate D62X Specimen t Specimen c 0.01 molar [NO ₃ ⁻]/[Cl ⁻]	122 heat 0599 048BG K type #1 does not cont NaCl	Curren 002LL2
Current Density, A/cm ²	10 ⁻⁴ - 10 ⁻⁵ - 10 ⁻⁶ -	Plate N060 Filler XX2 Plate D62X Specimen t Specimen c 0.01 molar [NO ₃ ⁻]/[Cl ⁻]	122 heat 0599 048BG K type #1 does not cont NaCl	Curren 002LL2
Current Density, A/cm ²	10 ⁻⁴ - 10 ⁻⁵ - 10 ⁻⁶ -	Plate N060 Filler XX2 Plate D62X Specimen t Specimen c 0.01 molar [NO ₃ ⁻]/[Cl ⁻]	122 heat 0599 048BG K type #1 does not cont NaCl	Curren 002LL2
Current Density, A/cm ²	10 ⁻⁵	Plate N060 Filler XX2 Plate D62X Specimen t Specimen c 0.01 molar [NO ₃ ⁻]/[Cl ⁻]	048BG K type #1 does not cont NaCl	002LL2
Current Density, A/cm ²	10 ⁻⁵	Plate N060 Filler XX2 Plate D62X Specimen t Specimen c 0.01 molar [NO ₃ ⁻]/[Cl ⁻]	048BG K type #1 does not cont NaCl	002LL2
Current Density, A/cm ²	10 ⁻⁶ -	Plate N060 Filler XX2 Plate D62X Specimen t Specimen c 0.01 molar [NO ₃ ⁻]/[Cl ⁻]	048BG K type #1 does not cont NaCl	002LL2
Current Density, A/c	10 ⁻⁶ -	Plate N060 Filler XX2 Plate D62X Specimen t Specimen c 0.01 molar [NO ₃ ⁻]/[Cl ⁻]	048BG K type #1 does not cont NaCl	002LL2
Current Density,	10 ⁻⁷	Plate N060 Filler XX2 Plate D62X Specimen t Specimen c 0.01 molar [NO ₃ ⁻]/[Cl ⁻]	048BG K type #1 does not cont NaCl	002LL2
Current Densi	10 ⁻⁷	Plate N060 Filler XX2 Plate D62X Specimen t Specimen c 0.01 molar [NO ₃ ⁻]/[Cl ⁻]	048BG K type #1 does not cont NaCl	002LL2
Current D	10 ⁻⁷	Plate N060 Filler XX2 Plate D62X Specimen t Specimen c 0.01 molar [NO ₃ ⁻]/[Cl ⁻]	048BG K type #1 does not cont NaCl	
Curren		Filler XX2 Plate D62X Specimen t Specimen c 0.01 molar [NO ₃ ⁻]/[Cl ⁻]	048BG K type #1 does not cont NaCl	
Cur		Specimen t Specimen c 0.01 molar [NO ₃ ⁻]/[Cl ⁻]	type #1 does not cont NaCl	tain weld
	10 ⁻⁸ —	Specimen c 0.01 molar [NO ₃ ⁻]/[Cl ⁻]	does not cont NaCl	tain weld
	10-0 -	[NO ₃ ·]/[Cl·]] = 0.0	
	-	Potentiosta	itic	1/7
	10 ⁻⁹ —	Keverse Sw	veep rate 0.0	10/ MV/
	10 ⁻¹⁰ —	· · · · · · · · · · · · · · · · · · ·		
		0	20,000	
			-	Tim
	•			
1	1 1			-1 1
1	<u>1 i</u>	r r i	1 1	
1.				-1 -
		-	1 1	- -
<u>1</u>	T1	1 1 1		
	1 1			<u> </u>
				\rightarrow
	1	- <u> </u>		
•				· · ·
1	1 1	1 1 1		
	тт 	1 1 1 T	<u>, , , , , , , , , , , , , , , , , , , </u>	1 7
1	1 1	· · · · · · · · · · · · · · · · · · ·		
	1	 	····	- T - T
tood by	me	Date		nvente
		1		ecord
-				10 ⁻¹⁰ 0 20,000



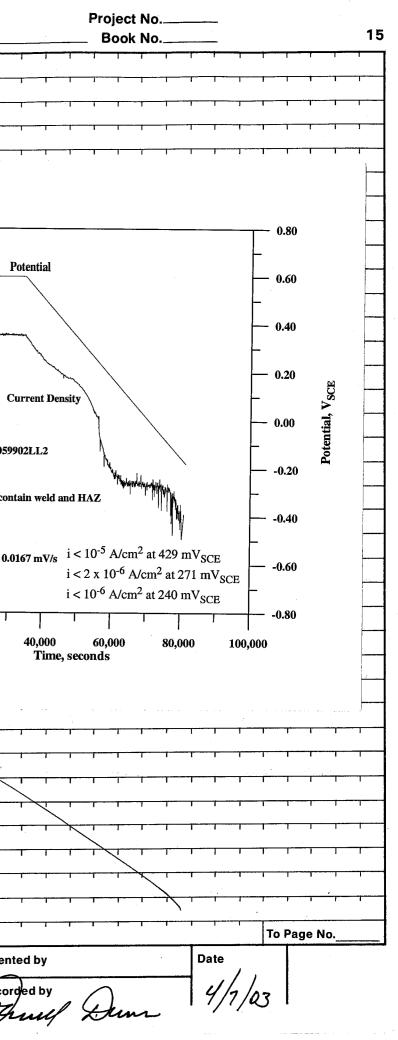
Project No. 12 Book No. TITLE From Page No. Repassivo Alloy C-22 '₽ See obsective: fr Alloy Alleyhan Specimon DOE N06022 -05990242 Inco Allor filler Lou Z 622 XX 204836 MID Decimin 2 PTFF Cintain Fin Dorsail m. 00 Gait polisheo Att. Aches st139017 Caevine Proto # 104 · ()col 3 Dise 0 103 34.28693 ston 2 Santonious 12509099 15/00 Die 5/15/03 34.27994 Eno 2 Solut: M Not 0.1 Naci 11.6840 627878 + PI 20000 5.894 מ 950 mete 3340 # 13-620-296 sn # 2291257 PL 480 Fishe Sw# 10/20 F Moor G Po 273 Cour Electabor Fla PT sn# Refin Fishen 13-620-52 6251434 sv # 00.387 55 5/ 10/02 QUE 5/10/03 cal - 494~ Eat -125m 6 99.999 % Sul esenatio 1/24 feet Examinati-Crevice Connosion Crevice Spein Staiplay on All surfaces of Specime Gob WAsher Data DOE W 65 To Page No. Witnessed & Understood by me, Date Invented by Date/ 4/3/03 Recorded by

From Page No		1		1 1	1		1 Construction	
· · · · · · · · · · · · · · · · · · ·			1	1	T			<u> </u>
	· - · ·		1	1 1	T			·····
<u> </u>								
<u> </u>		10	2	1				
		10	3	$\frac{1}{r}$			Po	otential
				. /				
		10-	4	/				
1 -11	n2			115	للمرميمي	*****	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
	A/ci	10 ⁻⁴	5					
	tv.	,						Current Den
	Current Density, A/cm ²	10-6	i	V				Juirent Den
	It D			DOEv Plate 1	v65 N060	22 heat	05000	0110
<u> </u>	Irrei	10 ⁻⁷	'	Filler Plate	XX2(48BG	03990	2002
<u> </u>	C			Specin	nen tv	vpe #1	conto	in weld and
		10-8		0.1 mo [NO ₃ ⁻]	lar N	aCl	conta	
				95 °C Potent				
- I -I		10 ⁻⁹	_	Revers	ie Sw	eep rat	e 0.010	67 mV/s i <
								i < i <
		10-10				<u> </u>		
- <u>r-</u>			! 0			20,00	0	40,0
			•			20,00		Time, se
								
· · · ·					æ,			
	···· 1	Т		11				
	I		r	1	,	<u> </u>		<u> </u>
			T	I I	1		1	T I I
······································			1	1 1	1		-	
·· 1 1 1 1	1		1 · ·	1. 1		1	1	
1 1 1 1	T	- 1	1	1	1	- 1	1	7 1 7
			1		1		-1	1 1 1
	1	I.	1	1 1	-1	-		· · · · · · · · · · · · · · · · · · ·
	-							, , , ,
	I	1	1	<u>і г</u>	1	. 1	1	.11 1
		1	1	1 1	r	<u>,</u>	-1	<u>, , , ,</u>
- 1 - 1 - 1 - 1	1	- 1	1 	11	ſ	- 		1 1 1
Witnessed & Un	dersto	od by	me,)ate	8		Invente
							1	Record

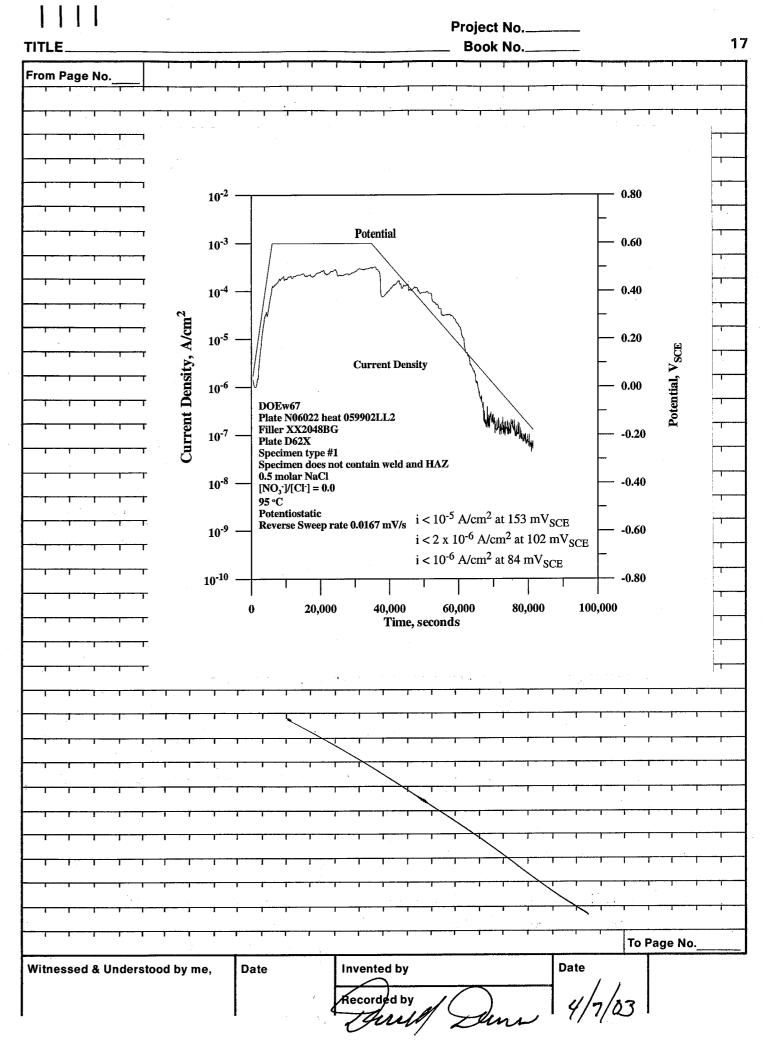


Project No._ 14 Book No._ TITLE From Page No. Potential A C-22 0ASSI ustion OPIEC DOE Allenharry Allor N)06022 <u>Specimen</u>. XX 204 8BG fillen heat 2 Bot 67.7 Inco Doc . PTFE 600 GRH Or = 610L oshers Attachen Crevi At 50 In-02 Usina 39072 Due 20 3 9 6/02 34.21146 Santoniu Genius 12809099 3 4- 21058 F 2 0.25 m NuC Ś 29.236, NuCl 60+# 927878 + DI water To 2000mls 950 meter 219 3340 .56 <u>چ</u>ر مع 13-620-296 2291257 Pl probe sw#41108 # 273 G MOR PT Flac Electrone Courter Rete 13-620-52 SN SN # *H94-170 Tempers -443 m Front 5/26/02 6764534 +39~ 5 26 03 0 99.999 5 Dralas Examination No Crevice Connosion Speum Colo + All Surfaces stainin Specime on 6 To Page No. DATA DOE-W66 Witnessed & Understood by me, Date Date Invented by **Recorded by** 414/03 1-10

From Page No.		î.	I	1 1		1	
			-1	rr	- <u>-</u>	- 1	т
	11	.'1	-	11	TT	-1	- ·
	TI	1		 /	T . 1	- <u>-</u>	
	, , , , , , , , , , , , , , , , , , , 	-1		, , , , , , , , , , , , , , , , , , , 	1 1		
	1 1	_					
	· .	_					
	· ·	~		1			
				10-2 -			
	1 T						
	1 1.	-		10-3 -			
	, , , , , , , , , , , , , , , , , , , 	-					
	1 - 7 -	-		10 ⁻⁴ -	-1		
 	T T	-	7		1/		
	, , , , , , , , , , , , , , , , , , , 	-	Vcn	10 ⁻⁵ ~			
		<u>-</u> :	y, A				
	· ·	_	nsit	10 ⁻⁶ -			
	-	_	Current Density, A/cm ²	10 ° –		w66	
		-	ent	-	Plate	N0602 XX20	2 hea
1 1	1 1		Lin	10-7 -	Plate	D62X	
	<u>, </u>	-	0		Speci	men ty men d	oes no
	11	-		10 ⁻⁸ -	[NO ₃]	nolar l /[Cl [.]]	NaCl = 0.0
	1 1	-			95 °C Poten		
	1 1	-		10 ⁻⁹ -	Rever	se Swe	eep ra
		-					
	1	-		10 ⁻¹⁰ —			
···· 1 1		-					
					0	20),000
	1 1						
		. .	•	• • •	•••	•	
· · · · · · · · · · · · · · · · · · ·	T I	1	1	1 1		~	1
-1 1 1	T - 1	-T	-1	1 1	T T		-
- 1 1 1	- i	1	1	1 1	1 1	1	
		1		1 1	11	1	-T-
<u> </u>	r ı	1	1	r 1	1 1		
		-	1	 	1 1		
	, , , , , , , , , , , , , , , , , , , 		1	 	1. 1.		
	.			1T	1 1		
	, . , .			· · ·	<u>`</u>		
	. 1				4 4		•
1 1 1				÷.	·		

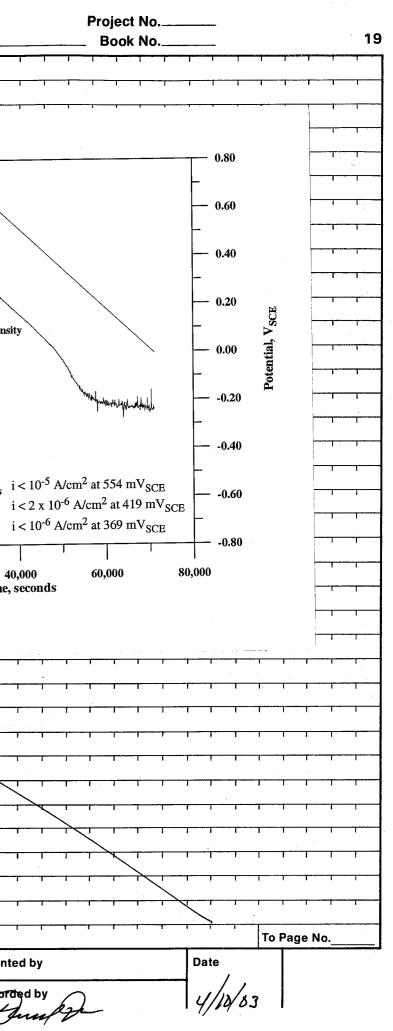


Project No.__ 16 Book No. TITLE. From Page No. Potes Repassive tiup Alloy A # ObJect Specimen DOE Allo 051902112 NOLOZZ 622 heat Rou Allo filler Inco XX TAUVISG Specimon INDE JOR Moter Fini PTFF Doesn C Polisheo Prop Crevie 139072 9/6/0 DUC 34.28055 12809099 SAN Gen 510 15102 0. torias 22 85 34. 0.5 m Mrc Nucl 54.49 027878 + DI 2000 .079 950 340 े रु 27 Pla Ø H 0251434 -620-57 cm Derg 00-35-7 Dues hermon sit. -466 614 0704934 -200 99.595 /0 M Solat Amater feet Sycaime Crevio Examination Suptace Colo AIL To Page No. Darto DOF_ W67 Witnessed & Understood by me, Date Invented by Date 4/4/03 **Recorded by**

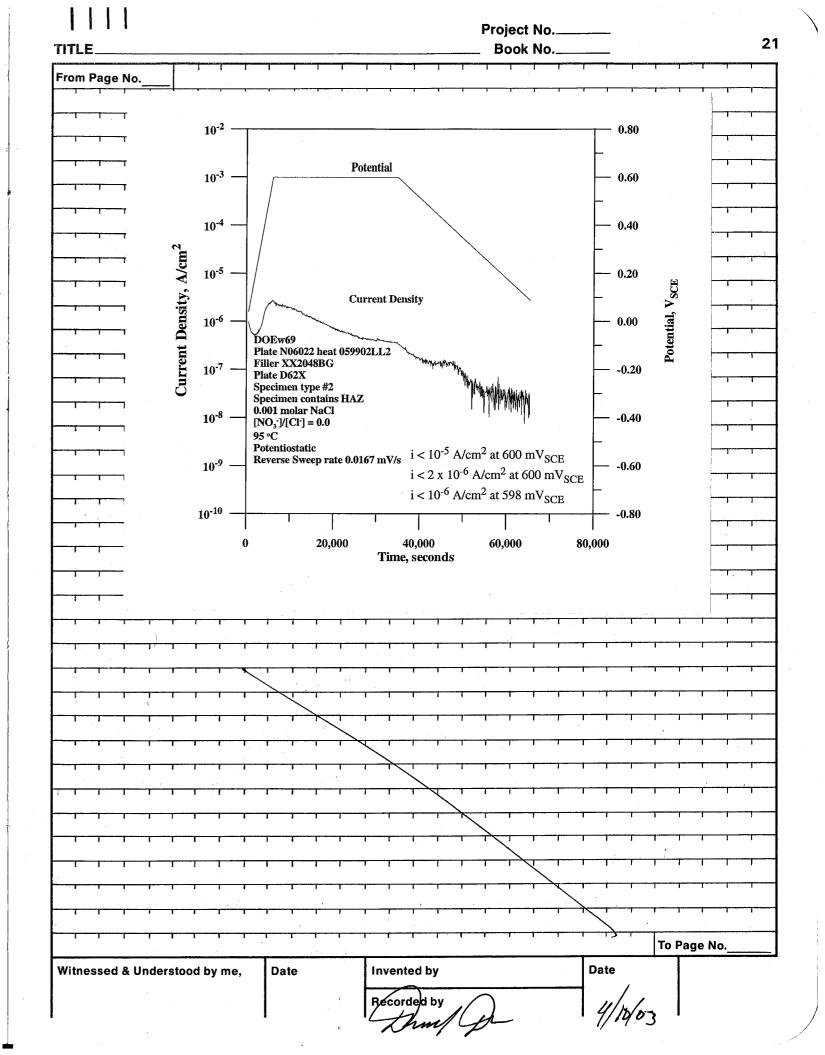


Project No._ 18 Book No._ TITLE. From Page No. Potes Alloy REDASSILA C-22 Ħ Obre Allew Alloy NO6022 -OS990ZLLT DOE <u>Specime</u>r hes XX 2048B6 fillen -Specimen 2 622 heat Inco -100 1 Doesr 600 Grit polishes Materia Finis PTFI Attachen At # 6104 Proto Caeulce Washers 50 In-02 Using 139677 Ove 9/6/03 Ca 3/1/03 Stort 34.15618 34.15 512 Eno nto Sal 0.01 m Nacl 11.695, Nacl Lot # 027878 + DI that 2000~ stort: 5.819 Fisher 950 motor SN# 3340 ρH 00 7.578 3-620-246 h PH Eno : 2251257 Drube ρ Ch sw#. moor 4110 6 Electaupe PT Fla Corr 13 -620 -52 Re 0249097 95 H98-170 lemo SN# 0704934 614 -371 m Econ +181~~ F 1 99.999 10 N 2/24 No Crevice Corrosio-Socum Examination ! CREDict fo faces Staining A Specia Osta DUE_UB To Page No. Invented by Date / Witnessed & Understood by me, Date Recorded by 4/ 2/03

TITLE			1		1		-			1	_
From Page	No.	_	, ,	1			'	'	'	'	
	1 1	i	- T	·	1	1		1		1	
1 1	1 1	<u> </u>	<u> </u>		T	1	1	1	- 1	1	
	т										
	т		2								
	т		10 ⁻²	Τ							
	т								Po	tential	
			10 ⁻³	-	ſ						_
	г				.						
1	r,		10⁻⁴	_							
1 1	г	8									
	r.	(cm	4.0-5		.	~~~~~					
	г	, A	10 ⁻⁵	٦							
	- L_	ity.							Cu	rrent	D
1	I	ens	10 ⁻⁶	-	\checkmark						
1	r-	It D			DOF Plate	Ew68 e N00	5022	heat	t 0599	02LL2	;
		Current Density, A/cm ²	10 ⁻⁷		Fille	r XX	204	8BG			
t F	-	CE			Spec	ime	ı typ	e #2	s HA7	,	
	-		10 ⁻⁸		0.01	mola	ar N	aCl	S HAI		
<i>,</i>	F		10 °		[NO 95 °(יינע מיינע	[]= [: 0.0			
	-				Pote	ntio	stati	c on ro	to 0 0	167 m'	v
	I		10 ⁻⁹		Rev	erse	Swe	epia	10 0.0	107 111	•
	-										
- I I	r		10 ⁻¹⁰			-1				- T	
				() N	,		20,	000		
	—			,	,			-00 -		Т	iı
	- .										
· · · · ·											
	 		·				T				_
			- <u></u> i		1		T	- T -	÷.	-	7
	, 						1		<u>-</u>	1	
	<i>,</i>				-		-			- 1	ר ר ר
	, 				-		-			- I	ר ר ר
	, 						-		-1		
										-	
											ר ר ר

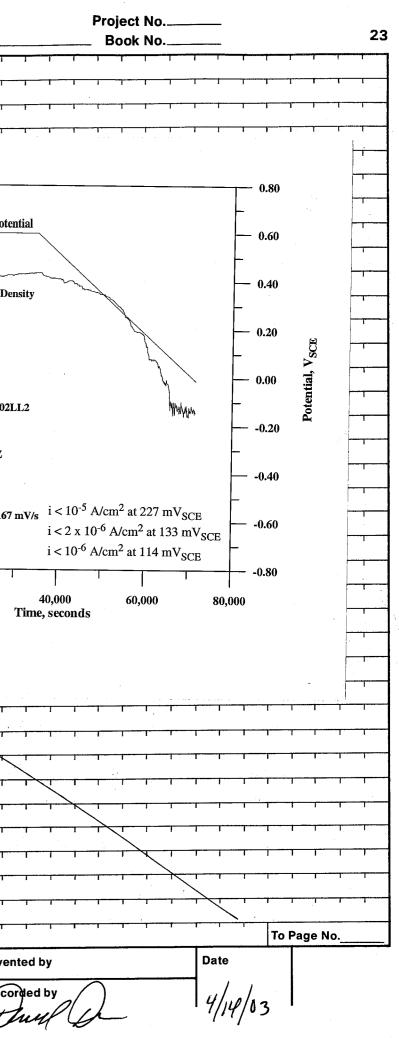


Project No. 20 Book No. TITLE From Page No. Potestia; Ø to Alloy C-22 Lepassivation Po#1 See nb Jec Alle DOE Specime Allox N06022-059902117 vol 220 XX 204836 £11. Jaco OTP Docin Gn 600 Caen AH D 56677 CA $\mathbf{\Omega}$ 34.24414 12 809090 Sta the der 34. 24 394 F Sol 0.001 M NuC Lot # 027878 Nucl 0.125,9-+ 07 water to 2000m OH Fisher Stan 5. 79 : 950 7/02 Q11 7.542 5N# -620-29 22912578 Eno -6 Mon Fla DT F R 13 025143 620. 95 00-387 Cal 5/10/02 OUL 0/03 -492 1 10 -137 -0 99.999 N feet L washe Examination No Chevice Corrosion 124 Crevice Snecin Stai Milo DDE-W69 To Page No. Witnessed & Understood by me, Date Date Invented by 4/1/03 Recorded by ٩.



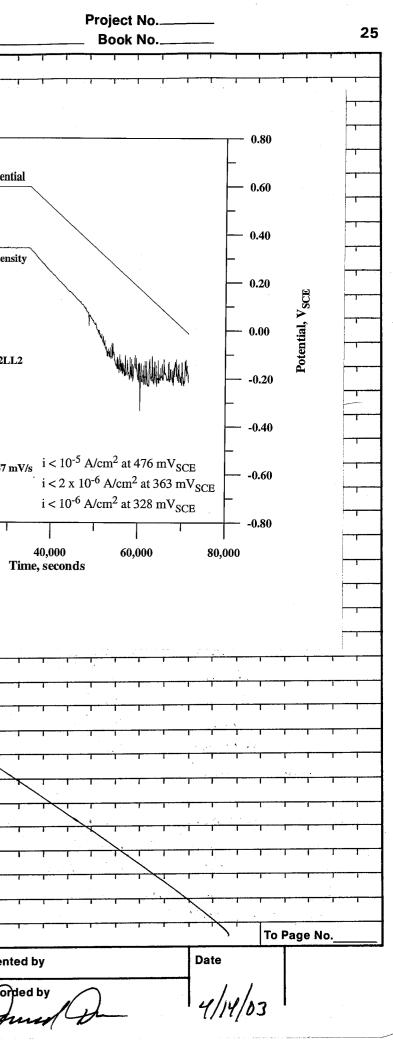
Project No..... 22 Book No.... TITLE From Page No. Repassi Allox (.22 # SAM ObJec Allegy <u>Specim</u> DOE 059902662 Allor NOLOZZ-Heat Inco Allor fille-622 heat XX 704866 Mateque Doca Gait Finish-600 Polishes Cae. Attaches Proto 6104 5N# Ashens Usin 13907 00 Due 9 34.06341 Geniu 34.6378 F c R Sol NhC 0.25 M 29.228 9 Mill Cot # 027878 2000 ~ 1 + DI woter oH Slan 5.754 . 950 Eno = 8.075 ρH 5~ # 4/105 # 273 Mone ρ٦ F R 0249092 205 95°C 5/10/02 DUE SI H98-170 Thermone lola lempinotu 5NT 0704934 -475 -1.14 Econ -123 m 99.999 Eramination: Crevice Corrosion Specime /24 Surfaces of Specia DALA DOE-W70 To Page No. Witnessed & Understood by me, Date Date Invented by Recorded by 4/9/03

From Page No.	1	1 1		
	· 	1 1	· · · · · ·	
	1	11	<u> </u>	
	<u> </u>	T 1	 .	I I
		10-2		
· · ·		10-2 -		
1 1 1 ~ ?				
		10-3 -		
		10 ⁻⁴	- <i>/</i> ~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
<u>i I i i i</u>	n^2			Currer
<u> </u>	Vcr	10 ⁻⁵ —		
	y , <i>t</i>			
	insit	10 ⁻⁶ —		
	Current Density, A/cm ²	L V	DOEw7	
···· • • • • • •	rent	10 ⁻⁷ —	Filler XX	6022 heat 059 X2048BG
	, ju	10	Plate D6	2X
			Specime 0.25 mol	n type #2 n contains HA ar NaCl
		10 ⁻⁸ —	[NO ₃ ·]/[(95 °C	$[1^{-}] = 0.0$
			Potentios	static
		10 ⁻⁹ —	Keverse	Sweep rate 0.
- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1		10 ⁻¹⁰ —		
	_	1	0	20,000
······································			-	,
		1 1		
<u>1 1</u>		T 1		
			<u> </u>	
		1 1		· ·
		1 1		1
	1 1	1 1	J I I	1 1
	11	1 1		1 -1
		11		1 1
	-1			
	· · · · · · · · · · · · · · · · · · ·	.		
		T F	· · · · · · · · · · · · · · · · · · · ·	- T - T



Project No... 24 Book No._ TITLE From Page No. Potestia Repossiuption Alloy 0-22 See Ħ ObJe. p. Specimen DOE Allor N06022 -Alleu udium Heat 059902663 Heat XX 2048BG filler Type 2 Row 4 Botto 550 Allow Inco Specime Contain Web Moterial Docs~? 600 Grit polishes F. PTFF Attoches Crevice In.02 Proto # washer At 50 Usin 104 139072 Cal Due 9/6/0 6/03 34.30989 Geniys SANTONIOUS 15/0: 12809099 34-28094 Eno ء ار 5/15/0 5.1 \bigcirc Nac M 6t#027878 11.690 . Nocl 02 2000 m water OH 6-079 51 950 ne 7 N SN# 2291257 P 7.246 540 620-291 Onobe Shi# Mar # G Electrope PT Fla Kef 13-620-52 0751439 5Nº#00-387 CA 5/10/1 5/10/0 Sm# 0704934 614 Kith 503 m F - 153 00 DUC 50/0 99.999 Examination: No Caesue Connor Specimin All Surfaces Gob that Staining DADA DOF-W71 To Page No. Witnessed & Understood by me, Date Invented by Date Recorded by

TITLE			·		
From Page No.				· 	r .
From Page No.	Current Density, A/cm ²	10^{-2} — 10^{-3} — 10^{-4} — 10^{-5} — 10^{-6} — 10^{-7} — 10^{-8} — 10^{-9} — 10^{-10} —	DOEw71 Plate N0 Filler X2 Plate D6 Specimen 0.1 mola [NO ₃]/[O 95 °C Potentios Reverse	Cur 6022 heat 22048BG 2X n type #2 n contains r NaCl Cl ⁻] = 0.0 static	e 0.0167 m
			,	20,0	T
······································				t	
		1 1		1	1 1
	111	· · · · · ·		 -	1
			т т 	~	· · ·
			· · ·	, 	
					· ·
			<u> </u>	1	11
		1 1	····	1	1
	·····	1 1	- i ^ć T		11
	······		· · · · · · · · · · · · · · · · · · ·	<u> </u>	1 1
	.	- 		·····	r í
Witnessed & Und	derstood by	me,	Date		Invente
				1	Record



Project No. 26 Book No.____ _____ TITLE. From Page No. Therma Treatment Sperciper 3 speciments Specimen Ouco Ŧ -ino bery 51322 Mupe 8750 DUIN O meya Cher HHZZ Micho procession thermomete 5W# 94140 4 10/29 Due 129/02 JSe.o hermocoup 14/03 ь u/11/03 .5 Procepyre 875°C Q hermal 874°C Ouch Temp 876 2 1:00 mic 876 '0 2:00 ... 3:00 pm 875 875 °C 4:00 min Eno = Remove After * Anneales noreoune Solution 1/250 Over point 5~# HHZZ T 94140 16 26/07 Ome 67 129 6/14/03 322 114/03 Die ern ocor 11750 1134.800 Temo = 15:00 (ω) 0 min 12 To Page No. Witnessed & Understood by me, Date Invented by Date 4/10/03 Recorded by

om	Page	No.	,		1	ı ,	, 	, ,	' 1	т т —	• •	1
-1	-1			4		r		· · ·	_	-+	1	1-
т-			<u>, 7</u>	<u>, </u>	en.a	-m	<u> </u>	1	<u>[</u> n	cat		~
	- F											
		5	2ec	in.	مع	h	<u> </u>	ne	1	<i>T</i> ,	ipe	1
1		$\mathcal{I}_{\dot{+}}$	oto	<u>\</u>	6	+-	4	ļ	5	pec	im	ç
		1	For	<u>ب</u>	A_	1	d.	λ	0	ϵ	/	<u>'5</u>
			,		<u>.</u>							
, 		_ ©_	Je	<u></u>	<u>.</u>	, ,	·	, 		, ,	• 	
1	r			·		<u>'Li</u>	<u></u>	be	n.		m	<u>ہ</u>
1	1	1										
T	1	0	JCr		5.	+	.00	1	:	1	11.	2
	1.		T	1	1	r - 1	T	1	1	T	í 	1
1	1	Ter	1	202			1.		C	•		Т
r	1	400	T	1-4-1			, 0,	7	,I	ŕ—	1	г
ł	1	1	1				1		1	1	1	Т
-			1	1	r	1	1	1	1	1	-	1
1	I	·	1	1	-		I I		-+1	1	1	1
-		- C	190 M	<u> </u>	-1-4	ype	T		, <u>, , ,</u>	767	pno	f
—	1.	<u>_</u>	γŲć			-2,	pp-	I	Ker	901	rg-	7
	1.	1	·		r	· ····		r		1		T
			1	I	1		1			1	· · · ·	r
1	-	A_	μ,	<u>_</u> 5	pec	í	ᠻ᠆᠈		-7	non	<u> </u>	т (
7		P	lisl	معد	}	1	γ	A	,(600	<u>}</u>	, (
		_X.	- - -	, (m	<u>г </u>	Ł	<u>e</u>	R	eρ	alis	he.	<u> </u>
		· ·	1	1	1	<u> </u>			•	1	, ,	
г		1	r	1					\sim	J		-
r					·	(\geq	~	-
			.									\geq
•			<u> </u>		1 2				. ``			
·		'	<u>.</u>									
I		1	1	· .								
1		1	ſ		1				1			1
1 1 1	1								1	; ;		1
1 1 1 1	1	- <u>T</u>	T	1								1
1 1 1	- <u>1</u>		, ,	I I			r	· ·	. <u>.</u>			
1 T T T	1 1 1	T	r 	 				- - -	- <u>-</u>			Ţ
1 1 1 1	1 3 1	-1 	1 1 1		 		r - 1 F - 1			1 1 1 1		r

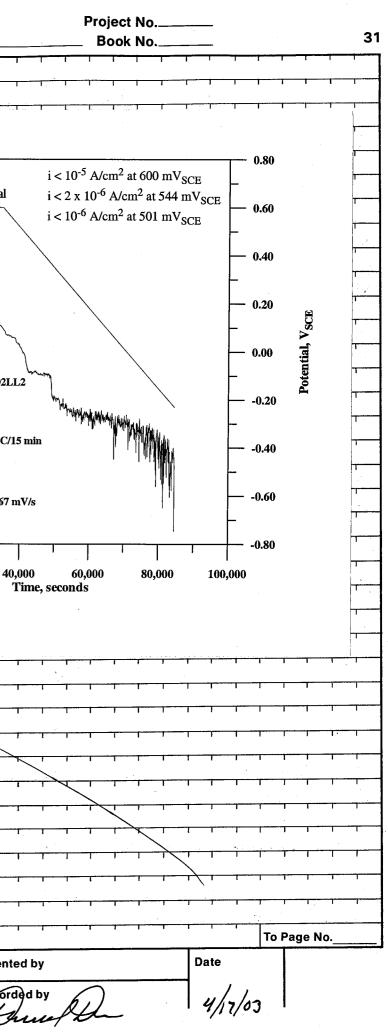
Project No. 27 Book No. Specimen Materi Contain web 11250 Sn 6 Anneales <u>5</u>N# 10917-Microprocesson thermometer mag 10/20 4/11/03 1134.8 27 Ano. Theama prior To Ga.+ 600 To Page No. Date nted by 4/10/05 orded by

Project No. 28 Book No._____ TITLE_ From Page No. Thermal Treatment of specimens SPECIMENS: CUT FROM PLATE D62X AND CONTAIN WEID METAL SPECIMENS ARE APPROXIMATELY 20,4 × 9.4 × 5.7 mm STARRETT 734M SN 02437171 <u>CA</u> 2/2/03 100-3-20 4/11/03 DUG 2/1/04 5.1 DETAILS OF WELD LOCATED IN NOTEBOOK SOS 20. MMM BASE METAL HEAT OS9902LLZ XX2648BG FILLER METAL 77 aveni 1300°C OUGN SETPOINT 1299 % OMEGA HHZZ SN TS4140 TEMP CHECK CAL 10/29/02 DUE 4/29/03 WITH TYPE K THERMOCOUPLE SN 332 6/4/03 1/14/03 1/1/03 CAL DUK DU Ululoz 1250°C OUGN SET POINT 1249 . QMEGA HHZZ SN TS4140 TGMP CNGCK TYPE K SN 332 om DD OUGN SET POTNT 4/11/03 1200 . OMEGA HH22 SN TS4140 1200 "2 TEMP CNECK TYPE 50 332 K SPECIMEN SOULTEDN ANNEAL TIME AND TEMP 1300 °C 15 min WATER QUENCH EUR. 1250°C FOR 15 min WATER QUENCH FUR IS Min 1200 °C WATER QUENCH To Page No. Witnessed & Understood by me, Date Invented by Date Recorded by 4/11/03

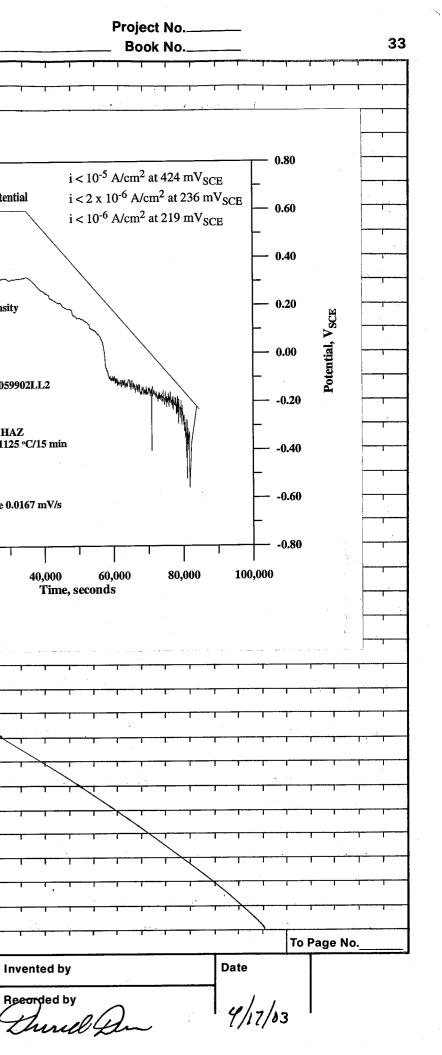
1 1 1 1 ITLE		Project No Book No	·	
rom Page No	- J		<u> </u>	
	1 1 1 1	<u> </u>		_
		- 		<u>-</u> -
	· · · · · · · · · · · · · · · · · · ·	<u> 1 1 1 1 1 1 1 </u>		
		· · · · · · · · · · · · · · · · · · ·		
				1
	- <u>1 T T T T</u>	<u> </u>		
	<u> </u>			
				.
		<u></u>	<u> </u>	
···				
			·	
				1
			-1- 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
	- 		- <u>1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 </u>	-1-
		, , , , , , , , , , , , , , , , , , , 	· · · · · · · · · · · · · · · · · · ·	-
······································				
	1 1 1 1			
		<u> </u>	- <u></u>	—
	- 1 1 1 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	<u> </u>		. , `
	- 	, , , , , , , , , , , , , , , , , , , 		
				<u> </u>
	· · · · · · · · · · · · · · · · · · ·			
<u> </u>	<u> </u>			
				<u> </u>
				<u> </u>
	- <u>1</u>	<u> </u>	$-1 \sqrt{1 - 1 - 1 - 1 - 1}$	
	····	· · · · · · · · · · · · · · · · · · ·	<u></u>	<u></u>
· · · · · · · ·				
				1.
- <u>1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 </u>	1 1 1			- <u></u>
· · · · · · · · · · · · · · · · · · ·				
		· · · · · · · · · · · · · · · · · · ·		-1-
		·····	- 	
			<u> </u>	
	1-		, , , , <u>, , , , , , , , , , , , , , , </u>	
	1 1 1 1 1		To Page No	
Vitnessed & Understood by me,	Date	Invented by	Date	
milesseu a onuersioou by me,	Date	I memea by		
· · · · · · · · · · · · · · · · · · ·				

Project No... 30 Book No._ TITLE From Page No. Repassing All C-22 **n**) DOE Allow NO6022-Alle Specimer Ludin DESSAZL hest fille. - Specime Inco Aller 627 XX 2048BG lou 2 TOP Contains 600 GR.t Materic Pales 2 PTFF Crevice Atta ± 6104 SN# 139072 3/6/13 Due Part Sh To-Oz Usion 00 Solution * Specing Anerleo See 33.84807 Sta Geniu Satorious 2809099 D Eno 33. 84719 2 fc loz 0.001 m Nac Noc Lot # 627878 0.1174 + PI $\tilde{\lambda}_{n}$ 2000m OH start= 5.787 Fisher Accument 950 mete ρH Éno; 8.649 s~+41108 Noral \$273 EG+G PT Flay Co E) ectrope = Reter 5N# 0249092 13-620-52 SN# 498-170 <u>Tempené</u> a -507~ +165 ~ Denenot 50 11.919 KN Crevice Comple Caevise Examination Specime 24 Vosher milo staining untaces Specimen Data To Page No. OOE_W72 Witnessed & Understood by me, Invented by Date, Date 4/14/03 Recorded by

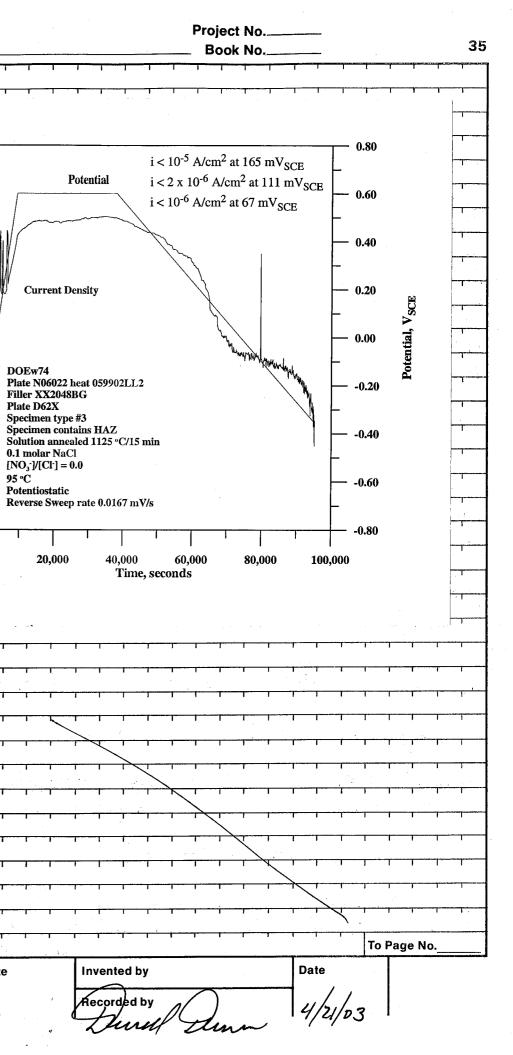
From Page No.				1	
-11	 -	···· 1 ··· 1	· · · · · ·	1	
1 1 1 1	•			radi si u	 ;
		10-2 -			
- 1 - 1 - 1				I	Potential
<u> </u>		10 ⁻³ -	- /		
- <u>11</u>		10 ⁻⁴ -	- -		
	cm ²	_	\mathbb{N}		
T T T	Current Density, A/cm ²	10 ⁻⁵	-11/	Current D	ensity
+ + + + +	sity,		IV	~~	m
	Den:	10 ⁻⁶ –			
	ant]		DOEw7 Plate N	06022 heat	t 059902L
1 1 1 1	nırr	10-7 -	Plate D	X2048BG 62X	
1 1 1	Ŭ		Specim	en type #3 en contain	s HAZ
		10 ⁻⁸	0.001 m	1 annealed olar NaCl	1125 °C/
1 1 1 1			95 °C	Cl ⁻] = 0.0	
		10 ⁻⁹ -	Potentie Reverse	Sweep ra	te 0.0167
		10 ⁻¹⁰ -			1
-1 1 1 1			0	20,000	40
					
<u> </u>				•	
	1 1 1 1	11	1		r r
	1 1 1	1 1	· · · ·		11
			 T	-	· · · · · ·
	T T T	1	r 1		
	<u>1 1</u>	- 11			· · ·
- <u>t-t-t</u>	1 1 1				1 1
······································	1 1 1	1	· · · ·		- 1
	1 	1	· · · · ·	1	r r
	1 1 1	1	<u> </u>		,
	1 1 1 1		· · · · · · · · · · · · · · · · · · ·		, , , , , , , , , , , , , , , , , , ,
, , , , , , , , , , , , , , , , , , , 	1-1-1	<u>1</u>	· · · · · · ·	1	r
	, , , , ,	·····1		·	
Witnessed & Under	stood by	me.	Date	1 A.	Invent
		,			1
				1	Record



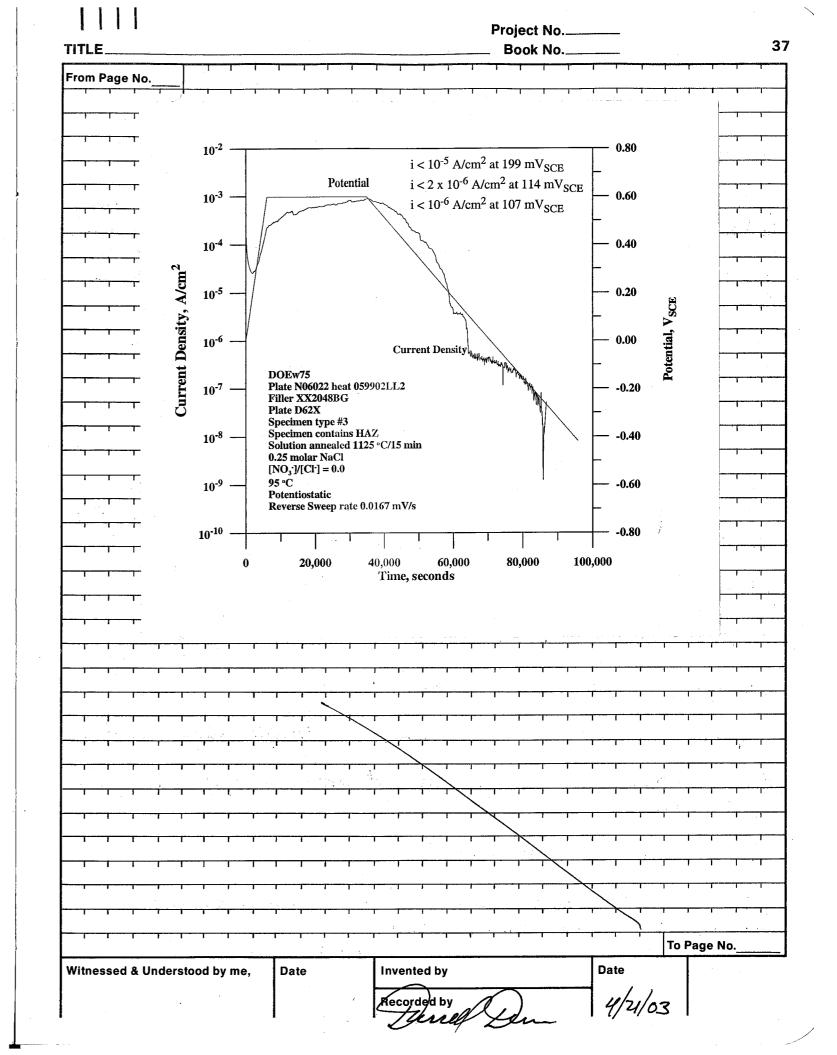
Project No.____ 32 TITLE. Book No._ TITLE From Page No. From Page No. Potent C-22 Allor Repassiva ot ≁ object 10⁻² Potential Specimen DOE Alloy NO6022 -10⁻³ Inco Aller Speumen Bat ZOUYSG R PTFF 0 H 2 Crevice washer 600 Geit 10⁻⁴ Sit At Proto 6104 S -17 13-172 04 0... t n A/cm² Anestes * Specimo # See 10⁻⁵ **Current Density** Density, 33.99578 start Santonious Gerius 10⁻⁶ 33. 98930 Eno DOEw73 Plate N06022 heat 059902LL2 Filler XX2048BG Current 10⁻⁷ Plate D62X Specimen type #3 Specimen contains HAZ Sold: 0-01 M NuCl 1. 12 NaCI 6+ # 027878 Solution annealed 1125 °C/15 min 0.01 molar NaCl [NO₃⁻]/[Cl⁻] = 0.0 10⁻⁸ DI + 2000m ster 95 °C Potentiostatic 10⁻⁹ Reverse Sweep rate 0.0167 mV/s ٥ŀ 728 950 formet cut 2291257 P # 13-620-296 woo 10-10 273 5N# 20,000 0 Ħ 6 64 Mode Σl PT Fla Ret SNE 620-52 0251439 20 t 93 00-387 5 Pue 60 Derg 1erman Erun - 508 764934 Diserates 99.999 Caquice Cornoslo-1/24 Francing f. Speu All surfaces of specime Golo staini 00 Data To Page No. DOF-W73 Witnessed & Understood by me, Witnessed & Understood by me, Date Date Date Invented by 4 Recorded by 03



Project No. 34 Book No. TITLE. TITLE. From Page No. From Page No. REPASSIUAtion Potentia Alloy C-22 10-2 # objectiv 10⁻³ Alle. Specimen DOF Alloy NU6022 -0599024 Botton InCO Alloy heat Mary 86 Row 1.22 11.2 Specimen 10⁻⁴ C. 600 Gz: £ ₽TFF Crevice Current Density, A/cm² Pag Attachen 1 At-50 Ja-Or (); 104 139072 \mathbf{c} 6//> 10⁻⁵ **Current Density** Solution * Specimen 10⁻⁶ 33-95648 Star 33. 90280 Eno ł = 10-7 -Plate D62X G.I M Nac Sol 10-8 -11.694 6+ + 027878 Nacl + DI $[NO_3^{-}]/[C1^{-}] = 0.0$ 2000-10⁻⁹ -95 °C 6.348 Fisher 957) ณ์ ام 3340 10-10 Sad A t 8 098 620-290 2291257 20,000 = cr#41/08 6 Moor PT Fla Retere (3-620-52 07490 Tem Deno thermom E Sm -552 F +160m 99.999 Descra **a**'0 Examination Socimon Caevice Corrosion feet 124 Sucfaces Stalaiz Golo Specia DOLA DOE-W74 To Page No. Witnessed & Understood by me, Date Date Invented by Witnessed & Understood by me, Date 4/18/07 Recorded by Di

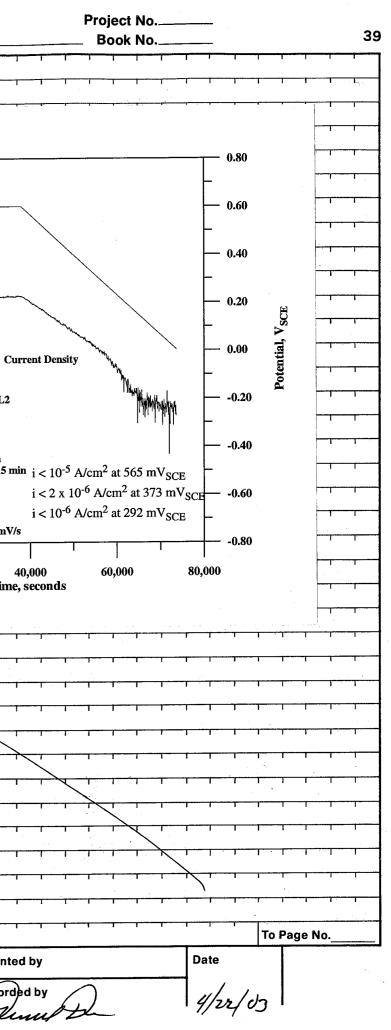


Project No._ 36 Book No._ TITLE From Page No. Potential REPASSIVA 0-22 Allox # object SAMO Specimen Alloy Alle. DOF N06022 -050902 Allon 622 Inco XX 204866 Specime Materio Contains Linto Gnit 600 Attach Proto 7.07 # 6104 At-50 Incares * See -# Salutio Specime 34.01910. Sta SANTONIOUS 12809099 Genius Eno 33.89036 nt? 5012 0.25 M Nacl 29.269, Nucl 40+ 4027878 DI To 2000 m Fisher OĤ 328 Star # 950 δH 126 8 91257 6 ZO - 29 6 6 4 MY YO SN 0510) FL ' le 13-620 <7 0251439 00-387 Nermon - 528 SN#0704934 614 +2 50 Crevice Washing Specipe Examinat fee Compion 24 Stainin 112 DOE. WY To Page No. Data Witnessed & Understood by me, Date Date Invented by Recorded by 18/03 D-



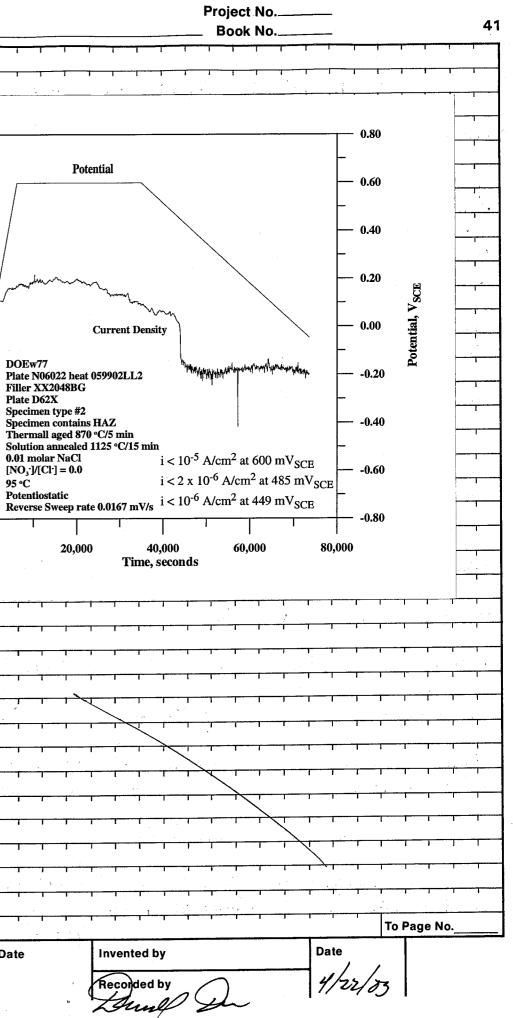
Project No._ 38 Book No. TITLE From Page No. Repassivation Poten Alloy C-22 Same # objective: Specime Alley DOE Inco Alloy 622 N06022-Alley 05990712 heat XX 204856 Mater 600 GR OTEE Attac 7-0 polisher Pro Using 6104 5N# 139072 LAyes @ 870°L 34.00892 12509099 540 11/15/02 Geni DUE 5/15/02 34.00728 Enp ut = 5dd O.OOI M Nucl 0.124. Nucl 61# 027878 + DI To 2000 m ъH Star 950 neter SW# 2291257 PL οM 13 -620 - 296 Eno 77 SN# 41108 pote 5G mode PT 3 s"# Rei 13-620-52 Fis 0249092 #H98-170 6 Thermometre Temper Econ 0704934 - 541~ 614 Fot : +118~ 99.995 /6 Sol 5 perim Caevice Contorio 124 5 2 Exanina I No Specime Golo Aves of DAT DOE W76 To Page No. Witnessed & Understood by me, Date Date Invented by 4/21/03 Recorded by

From Page No.				1	1	,	ł	1	1 1
	—	·}				-	1	Ţ	1 1
	-1	• • • •		- T -					.
 			4 0 - 2						
			10 ⁻²						
			. 1					Poten	tial
			10 ⁻³						
				-		/			
			10 ⁻⁴						
		2m ²							
		A/c	10 ⁻⁵	-		/~~		~~~~	~~~~
<u> </u>		ity,			V	/			
		Current Density, A/cm ²	10 ⁻⁶	\neg	<i>[</i> .				
<u> </u>		nt D							
		Intel	10 ⁻⁷		/ Pla		6022 l		59902L
		C			Pla	te D62	(2048) 2X		
			10 ⁻⁸		Spe	cimer	n type 1 cont	ains H	IAZ
					The	ermal	l aged	870 °	C/5 min 25 °C/2
			10 ⁻⁹		0.0 [NC	01 mo D,∵]/[C	lar Na 21-] = (aCl).0	
			10		95 9				
~~~			10 ⁻¹⁰		Rev	verse	Sweep	rate	0.0167
			10			I			I
				0)		20	,000	Т
·····									
		1. 1							
			·						
· · · · · ·									
		11	1.		1				1 1
	1.	1 1		1	1	Т			· · · ·
								—	1
	-1		I	1	T	-T			
	, ; , ;					- - -			
		1		1	- <u>1</u>	- T	т	1	1 1
	1	1 T		- 1 	1	1	1 1	1 1	
	-1	1 T		- 1 	- 1	1	1 1 1	1 1 1	г г
		1 1		- 1 - 1 - 1 - 1	1 	1	1 1 1	T	1 T T T
	-1 -1 -1	1 1		- 1 - 1 - 1 - 1	1 	1	T T T	T	1 - 1 1 - 1 1 - 1
	1 7 7 7			- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	- 1 - 1 - 1 - 1 - 1	1 1 1 1	T T T	1 1 1 1	1 1 1 1 1 1 1 1
	1 		- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1		- 1 - 1 - 1 - 1 - 1 - 1	1 1 1 1	1 1 1	1 1 1 1	r - r r - r r - r r - r
	1 		- I - I - I - I - I - I - I - I - I - I		- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	1 1 1 1 1	1 1 1	1 1 1 1 1	

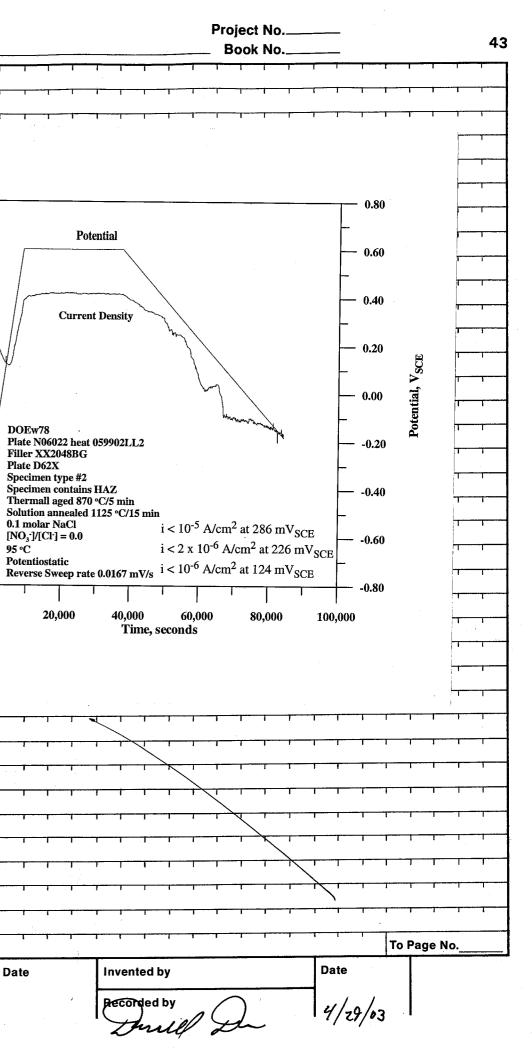


Project No. 40 Book No. TITLE From Page No. Re passivation Potentia Alloy 55-2 #1 Sec object <u>Py</u> NObozz - Alleyhany DOE Allow Specimer: 559902662 · Inco Alloy 622 Roul Conten heat XX 2048BG fillen -Specimen Type Doorn Mosters P Attaches At 600 GR PTFE CALVICE 50 T. Or uashens 139072 SNIT Pasto # (104 10 7 DUE 9 Thermall Section /6/177 for Annialeo 33.87151 Stort 5~ # 12809099 33.86964 En Soluti O.OI M Nucl 1. 176 Nacl 6+# 027878 DI water To ZOUDAL ۵M SN#3340 9 81 5 -AA 950 mit **?** PH #13-620-296 22912578 SW# 10120 ₽ E 570 poten MODE PT Cour FA 5NT Reteren 13-620-52 0251439 <u>s</u>N# 95 Thermor 00-387 Tempenort Pue /10/02 - 539 Ecus Keith 1.14 6704524 + 18 F. + 5 Deservites v, 59.999 \mathcal{N} 501 1/24 Feet of Crevice Washen Spacing Examina Carula Consolon of speci Golo + Sunfaces To Page No. DOF-W77 5 Witnessed & Understood by me, Date Invented by Date/ Recorded by 421/05

TITLE. From Page No. 10⁻² Potential 10⁻³ -10⁻⁴ A/cm² 10⁻⁵ Density, 10⁻⁶ **Current Density** Current DOEw77 10-7 -Plate N06022 heat 059902LL2 Filler XX2048BG Plate D62X Specimen type #2 Specimen contains HAZ Thermall aged 870 °C/5 min 10⁻⁸ -Solution annealed 1125 °C/15 min 0.01 molar NaCl $[NO_3]/[Cl] = 0.0$ 10⁻⁹ -95 °C 10⁻¹⁰ 20,000 Invented by Witnessed & Understood by me, Date Recorded by



Project No. 42 Book No. TITLE TITLE. From Page No. From Page No. Repassivation Potential Allor C-22 # object 2Ame : DOE Alloy NO6022- Alleghany Inco Allor Heat 059902112 Specimon 10-2 . Udlun heat XX 2048BG fillen Specimen Roul Materia Fype 2 Bottom · Doesn? Contain Potential PTFE Attacheo 600 Gast F At 50 In- 0, 10⁻³ Crevice washers Dh 6104 CA Specimo 139072 Thermally DU. 103 H e **10⁻⁴ Current Density** Current Density, A/cm² Stan 33.78510 Sontorious Genius 10⁻⁵ 33.76565 Eno 10⁻⁶ Solution O.I M NaC Lot # DOEw78 11-6914 NACI 10⁻⁷ Plate N06022 heat 059902LL2 Filler XX2048BG 627872 14 1 Plate D62X Specimen type #2 Specimen contains HAZ Thermall aged 870 °C/5 min Solution annealed 1125 °C/15 min 2000ml 10 LATE-10⁻⁸ P 5.893 SN 950 2340 ۶ sw# 5N# 0.1 molar NaCl 22912578 01 13-620-296 10-9 - $[NO_3]/[Cl] = 0.0$ -071 95 °Č Potentiostatic 50 th EG+G ' # 10⁻¹⁰ More 41108 26 20,000 0 Fla PT Court Electrore Reterioric F. 13-620-52 SN¥ 024902 5m# H98-170 TIMAZO hermon SN# 070 4934 Ecv. . 10 126 0 500 99.999 CREVice Consoster on Crevice 1/24 feet Specime Examination: All Surfaces of Specime Stain Golo -To Page No. DOF. W78 Oalo Witnessed & Understood by me, Date Date Invented by Witnessed & Understood by me, Date 03 Recorded by



Project No..... 44 Book No.___ TITLE From Page No. т I have reviewed this scientific notebook and find it in compliance with QAP-001. т There is sufficient information regarding procedures used for conducting tests, acquiring and analyzing data so that another qualified individual could repeat the activity. <u>zin</u> 6/6/05 -۰^۲ 1 i. ı, 1 1 1 F To Page No. Witnessed & Understood by me, Date Date Invented by **Recorded by**

ADDITIONAL INFORMATION FOR SCIENTIFIC NOTEBOOK NO. 578

Document Date:	08/08/2002
Document Date:	00/00/2002
Availability:	Southwest Research Institute® Center for Nuclear Waste Regulatory Analyses 6220 Culebra Road San Antonio, Texas 78228
Contact:	Southwest Research Institute® Center for Nuclear Waste Regulatory Analyses 6220 Culebra Road San Antonio, TX 78228-5166 Attn.: Director of Administration 210.522.5054
Data Sensitivity:	 ■"Non-Sensitive" □ Sensitive □ Sensitive - Copyright" □ Sensitive - Copyright
Date Generated:	06/04/2005
Operating System: (including version number)	Windows
Application Used: (including version number)	Excel and others unknown
Media Type: (CDs, 3 1/2, 5 1/4 disks, etc.)	1 - CD
File Types: (.exe, .bat, .zip, etc.)	xls, dat
Remarks: (computer runs, etc.)	Media contains one folder named DOE welded Alloy 22 containing data files.