

## QUALITY VALIDATION (QV) REPORT

### Red Hill Bulk Fuel Storage Facility Defuel

Validation Firm	HDR Environmental, Operations and Construction, Inc.	Repair No.	DEF 002
Address	9781 S. Meridian Blvd., Suite 400, Englewood, CO 80112	Repair ID	RMMR.ZONE 7
Contract No.	FA890315D0007, D.O. FA8903-19-F-0027	Report Date	28 DEC 2023
QV Engineer	(b) (6)		

### VALIDATION

Source	PDF Page No.	Facility Geographic Area	Location Reference
RMMR	N/A	RH Tank Gallery	Zone 7 Sump/Door C
Repair Description	Replace weeping (b) (3) (A) FOR piping from the Zone 7 Sump bulkhead at Door C to the point of connection to the (b) (3) (A) FOR piping in the pipechase at Tank 15/16. [cont.]		(b) (6)
Description of Contractor QC Method(s) Used	Methods outlined in detail in QCP. Hydrostatic testing at (b) (3) (A) psi with water as the test medium for four hours.		Contractor QC Records Reviewed QCP and Daily Reports.
Description of QA Validation and Observations	QA methods outlined in QASP. JTF-RH secondary QA and 3rd Party QV completed. JTF-RH QV visually inspected repair & reviewed contractor QC. Verified completed construction against material submittals. Reviewed NDE documentation.  Final acceptance by government. Date: 22 DEC 2023		
Rework Needed		Photo Record Attached	Repair Work Validated as Complete
<input type="radio"/>	Yes	<input checked="" type="radio"/>	No
		See Pages 2-4.	<input checked="" type="radio"/> Yes <input type="radio"/> No

**Comments**

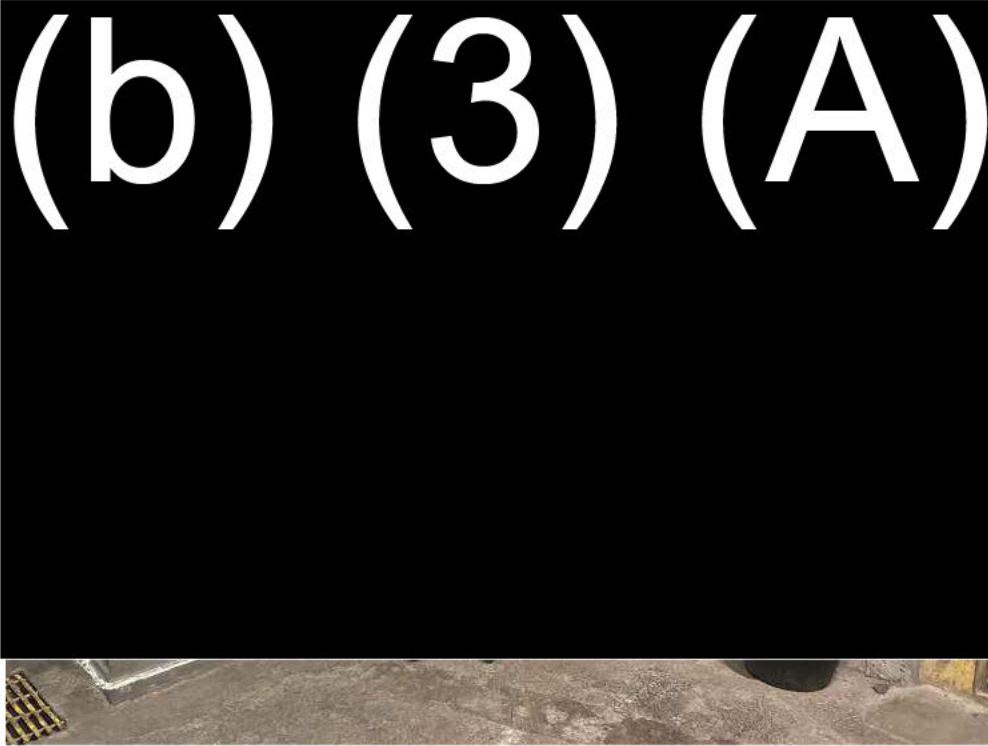
Repair Description cont. "Replace (b) (3) (A) FOR piping from Zone 7 sump bypass Visi-Flow to bulkhead point of connection."  
 Contractor replaced (b) (3) (A) threaded piping from the Visi-Flow flange to the tee on the bulkhead wall of Door C. From the tee, contractor replaced (b) (3) (A) threaded piping through the bulkhead penetration in the existing path to the point of connection on the (b) (3) (A) FOR piping in the pipechase at Tank 15/16. Contractor restored connection to the Elevator 72 sump discharge. Hydrostatically tested threaded assemblies at (b) (3) (A) psi with water as a test medium for four hours.

### CERTIFICATION

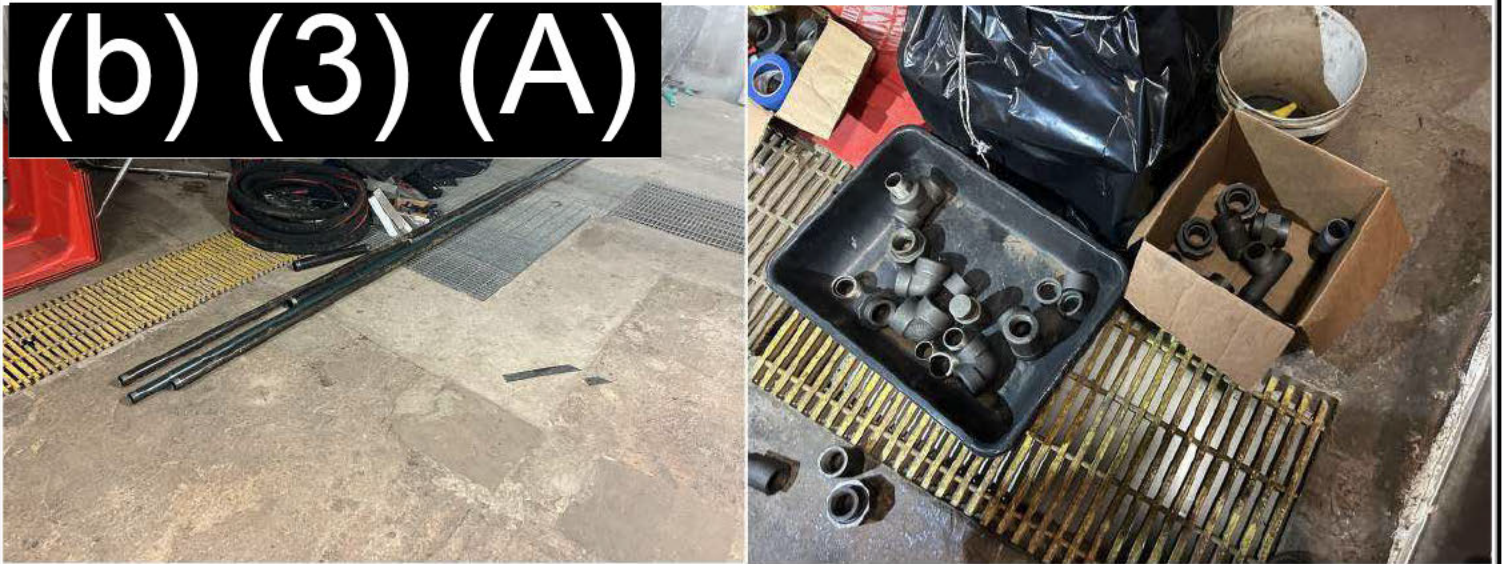
I hereby certify that repair work validated in this report was personally substantiated and this report is true.	<b>QV ENGINEER SIGNATURE</b> (b) (6)
	<b>DATE</b> 28 DEC 2023

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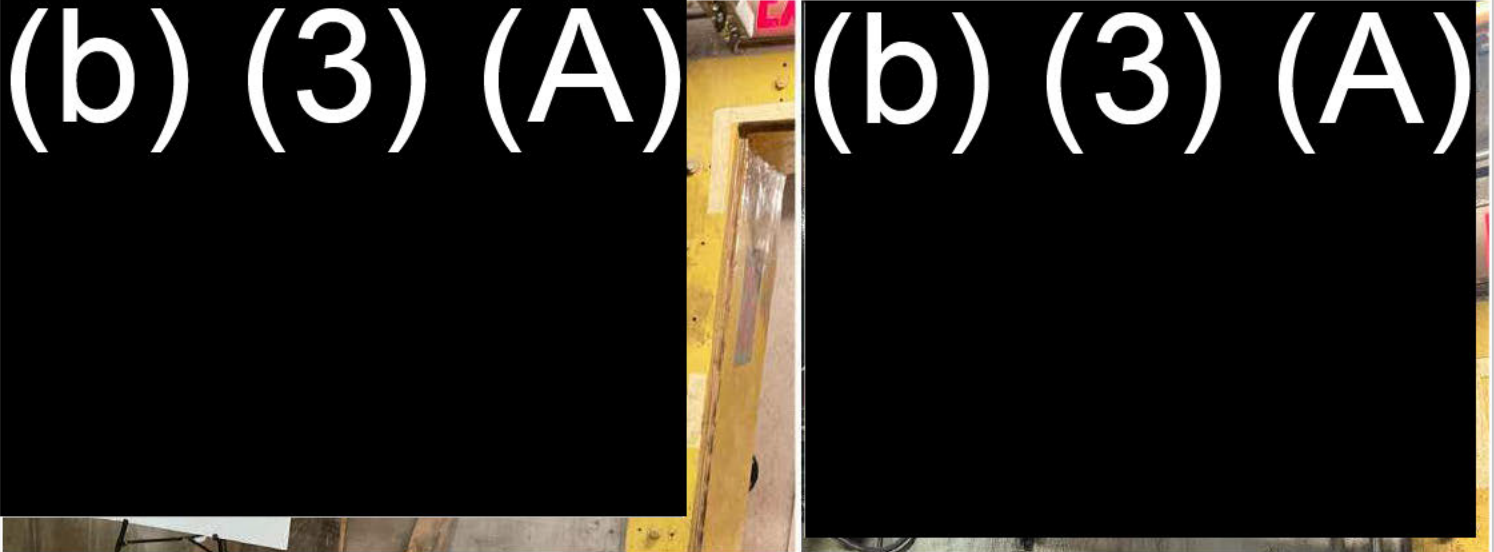
Replacement section (b) (3) (A) pipe at Zone 7 Sump from Visi-Flow to tee on Door C bulkhead (prior to (b) (3) (A) pipe repair).



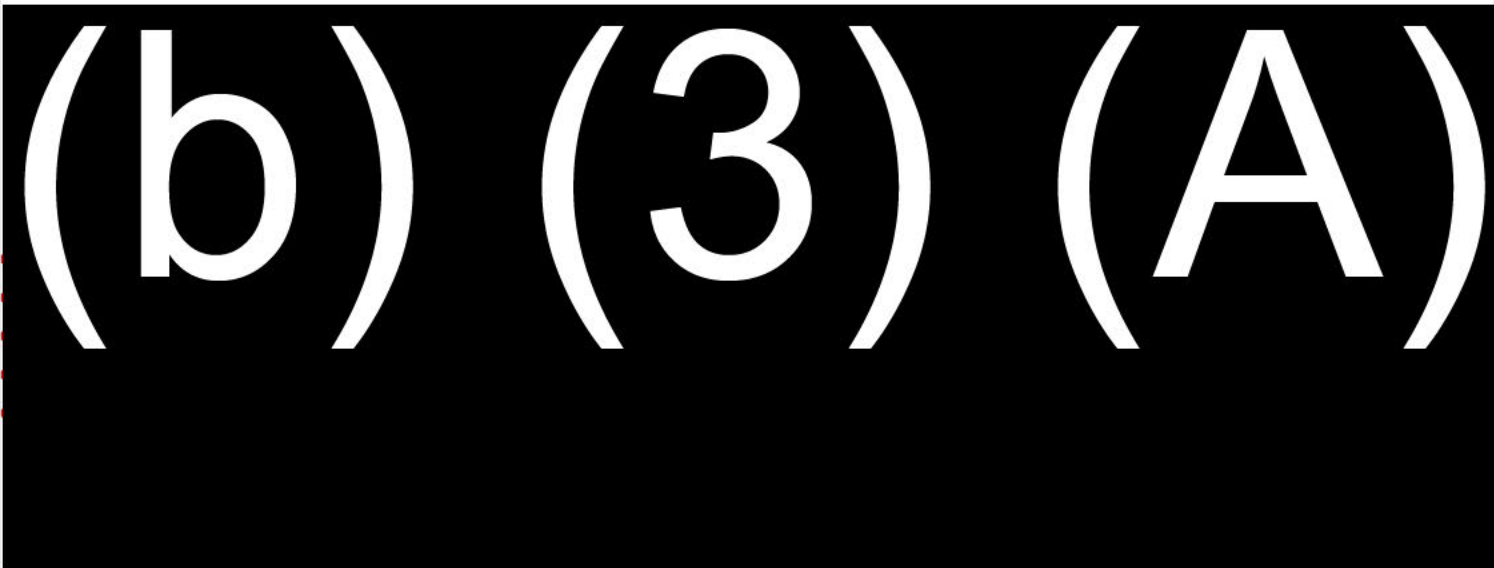
New threaded piping and Class 3000 fittings used for replacing existing FOR piping at Zone 7.

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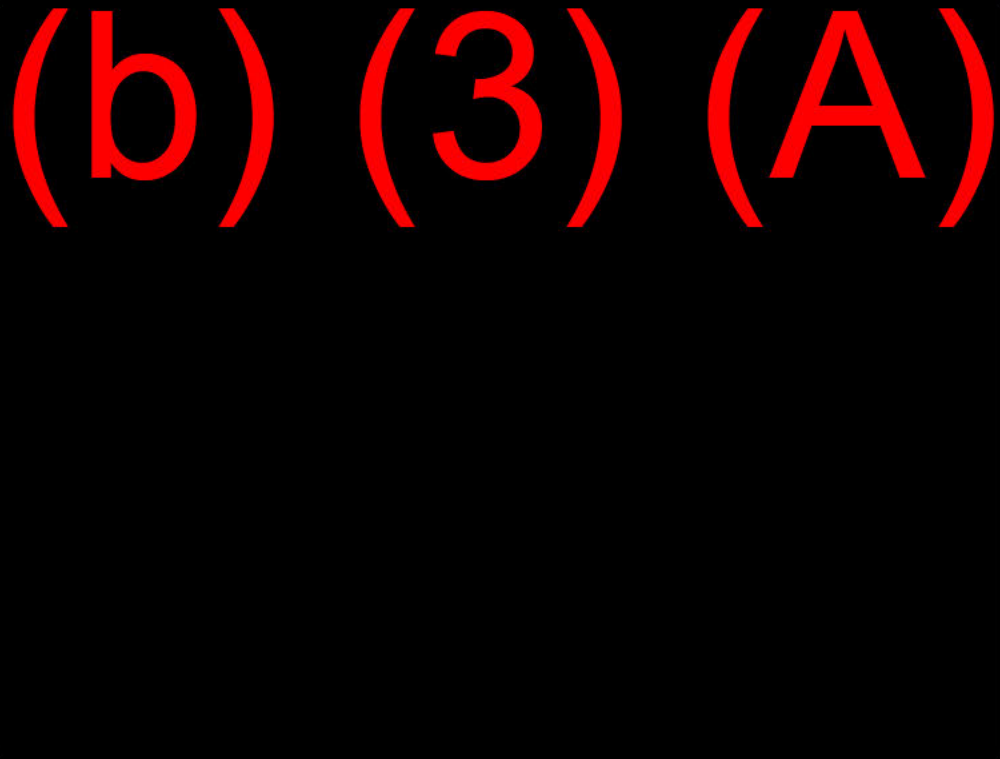
Before (left) and after (right) (b) (3) (A) line at Zone 7 Sump from tee on Door C bulkhead to FOR line at Tank 15/16.



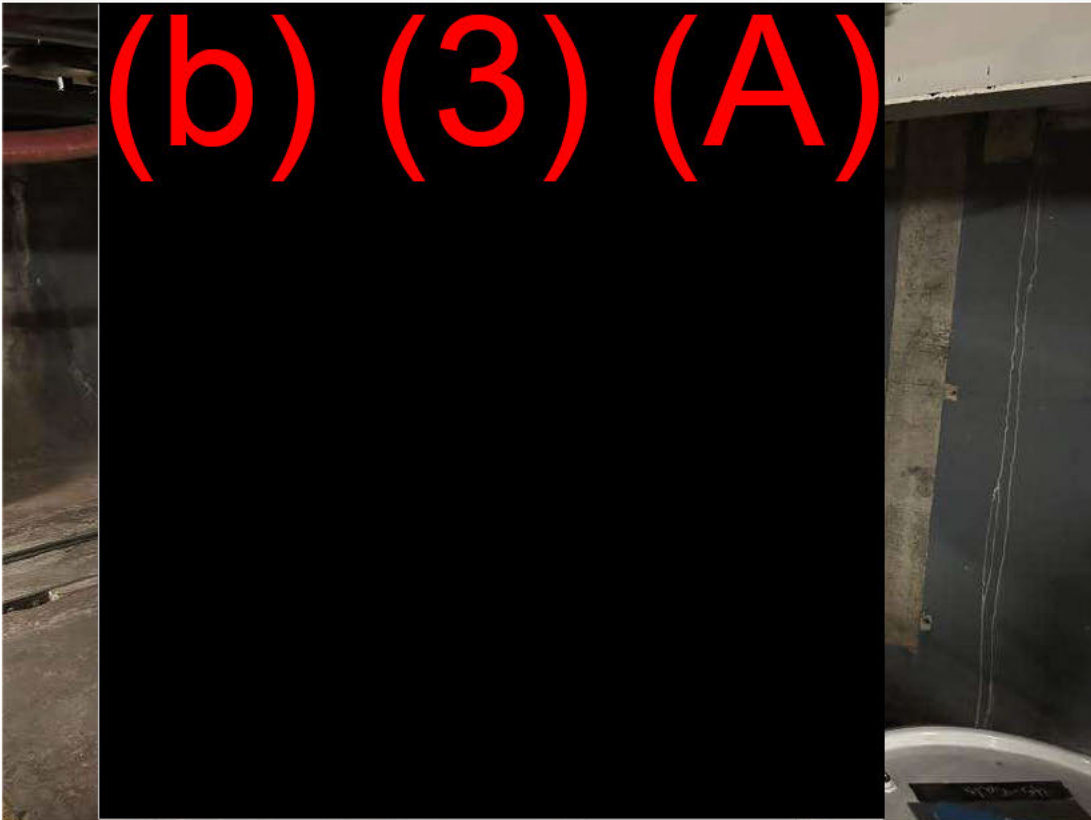
Before (left) and after (right) (b) (3) (A) line through bulkhead sleeve to FOR line at Tank 15/16.

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Restored tee connection to existing Elevator 72 Sump piping.



Restored connection to existing ball valve on FOR line at Tank 15/16.



Pond Constructors, Inc.

Construction Services  
Design Build  
Program Management

3500 Parkway Lane  
Suite 500  
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### Hydrostatic / Pneumatic Pressure Test Log

<b>Pipeline Operator</b>	<b>Testing Company</b>
	Pond
	3500 Parkway Lane, Suite 500
	Peachtree Corners, GA 30092
	(678) 336-7750

<b>Pipeline Operator Representative (QAE)</b> (b) (6)	<b>Testing Company Representative (Site Manager)</b>
----------------------------------------------------------	------------------------------------------------------

**Overview:**  
Pond performed a hydrostatic pressure test of 100PSIG for 4 hours on the new installed pipe from Zone 7 to the FOR line. Testing equipment that was inspected by Pond prior to testing. All equipment was found to be in compliance and in proper working condition. The 4 hour hydrostatic pressure test was successful and system returned to base personnel.

Equipment Instrument	Make	Model Number	Serial Number	Date Last Cal.
High Pressure Pump System	RIDGID	1450	40151557	N/A
Test Pressure Gauge	NOSHOK	25-901-300	1727900004	10/2/2023

Pipeline Identification	Pipeline Location		Last Test Date	Design Pressure	MAWP
Zone 7 Sump By-Pass	Zone 7 Red Hill		N/A	(b) (3) PSIG	(b) (3) PSIG
Manufacturer	Test Medium	Pipe Material	Pipe Length (total)	Pipe Vol (Total Gal)	Test Connection Location
		(b) (3) (A)			
Reason for Test:	New	Annual	Replacement	Repair	5-Year
	X				
Observed Pipeline Condition:	Painted	Corrosion	Wrapped	Insulated	Other
					New
Type of Test:	Hydrostatic (150%)	Pneumatic (110%)	Test Time	Test Pressure	Isolation Valve
	X		4 Hours	(b) (3) PSIG	RS3RA & RS3RG
Pipe Diameter (inches)					
1-1/2"	2	4	6	8	10
X	X				
Pipe Length (feet)					
(b) (3) (A)					
Pipe Volume (gallons)					
(b) (3) (A)					

<b>Pass/Fail:</b>	<b>Notes:</b>
Pass	See test chart in bottom tab. No leaks and no pressure drops during test.

Witness		Testing Company Representative	
Name:	LT (b) (6)	Name:	(b) (6)
Title:	QAE	Title:	Site Manager
Date:	12/27/2023	Date:	12/21/2023
Signature:	(b) (6)	Signature:	(b) (6)

**Photo Log**

Photo 1



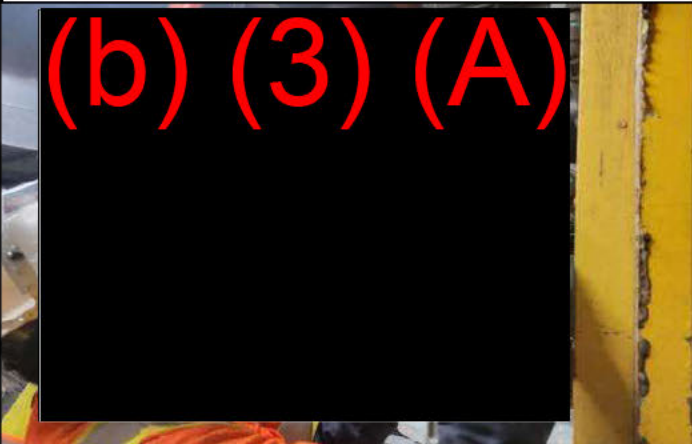
Calibrated 0-300 pressure gauge.

Photo 2



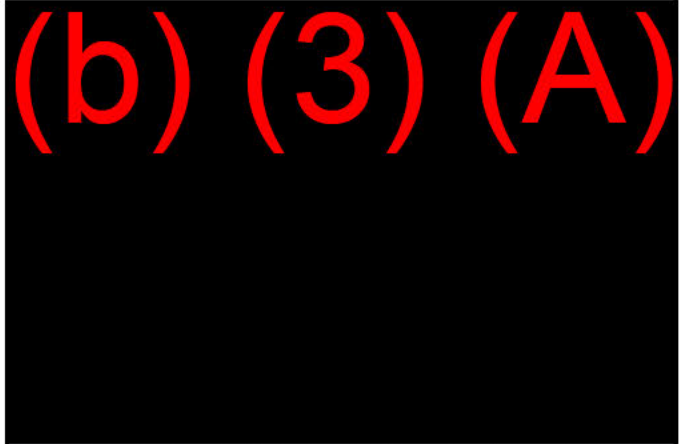
Hydrostatic pressure testing pump.

Photo 3



Installing water hose connection to system piping.

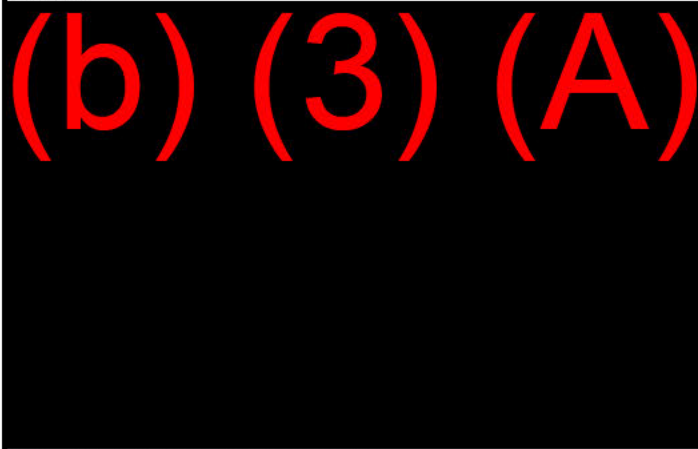
Photo 4



Connected water hose to flush air out of the system before starting test.

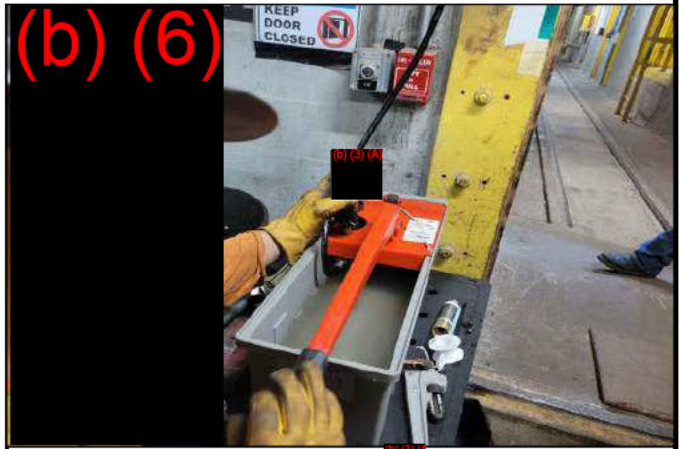
**Photo Log**

Photo 5



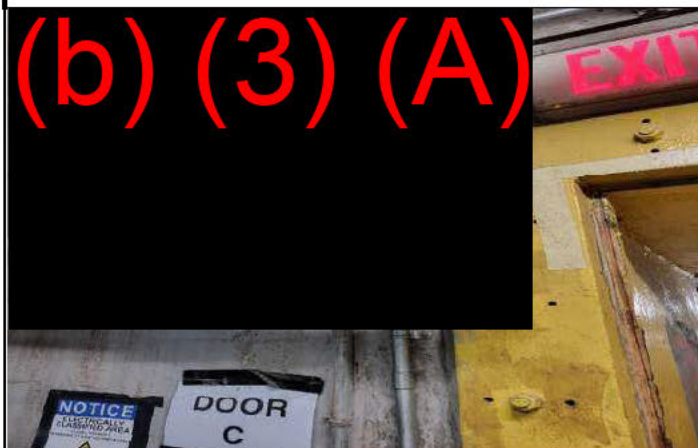
Connecting hydrostatic pump connectors.

Photo 6



Pumping the hydrostatic pump to get out (b) (3) (E) PSIG testing pressure.

Photo 7



System returned to normal after 4 hour pressure test passed.

Photo 8





Start/ Stop	Date	Time 24-hr format	Elapsed Time (Minutes)	Pressure	Temperature Ambient	Temperature IRT@MLA	Bleed (gal) (+) Add (-) Drained
Start	12/21/2023	9:15:00 AM	0	61.31 PSIG	74		0
		9:30:00 AM	15	61.31 PSIG	74		0
		9:45:00 AM	30	61.31 PSIG	74		0
		10:00:00 AM	45	61.31 PSIG	74		0
		10:15:00 AM	60	61.31 PSIG	74		0
		11:15:00 AM	120	61.31 PSIG	74		0
		12:15:00 PM	180	61.31 PSIG	74		0
Stop	12/21/2023	1:15:00 PM	240	61.31 PSIG	74		0

Table Note 1: Volume rounded to the nearest gallon.  
 Table Note 2: Test pressure based on 61.31 times MAWP



Nominal Diameter (In)	Volume(Gal/ft)	Actual ID (In)	Actual OD (In)	Weight (Ft)	Flange Diameter (In)	Flange	BOLT CIR DIA (IN)	NO OF BOLTS	BOLT DIA (IN)	BOLT LENGTH (IN)
1/8	0,003	0,269	0,405	0,25						
1/4	0,005	0,364	0,54	0,43						
3/8	0,010	0,493	0,675	0,57						
1/2	0,016	0,622	0,84	0,86						
3/4	0,028	0,824	1,05	1,14						
1	0,045	1,049	1,315	1,68	4,25	0,438	3,125	4	0,5	1,75
1 1/4	0,078	1,38	1,66	2,28	4,625	0,5	3,5	4	0,5	2
1 1/2	0,106	1,61	1,9	2,72	5	0,563	3,875	4	0,5	2
2	0,174	2,067	2,375	3,66	6	0,625	4,75	4	0,625	2,25
2 1/2	0,249	2,469	2,875	5,8	7	0,688	5,5	4	0,625	2,5
3	0,384	3,068	3,5	7,58	7,5	0,75	6	4	0,625	2,5
3 1/2	0,514	3,548	4	9,11	8,5	0,813	7	8	0,625	2,75
4	0,662	4,029	4,5	10,8	9	0,938	7,5	8	0,625	3
5	1,039	5,047	5,563	14,7	10	0,938	8,5	8	0,75	3
6	1,501	6,065	6,625	19	11	1	9,5	8	0,75	3,25
8	2,599	7,981	8,625	28,6	13,5	1,125	11,75	8	0,75	3,5
10	4,096	10,02	10,75	40,5	16	1,188	14,25	12	0,875	3,75
12	5,815	11,938	12,75	53,6	19	1,25	17	12	0,875	3,75
14	7,029	13,126	14	63,3	21	1,375	18,75	12	1	4,25
16	9,180	15	16	82,8	23,5	1,438	21,25	16	1	4,5
18	11,620	16,876	18	105	25	1,563	22,75	16	1,125	4,75
20	14,442	18,814	20	123	27,5	1,688	25	20	1,125	5
24	20,887	22,626	24	171	32	1,875	29,5	20	1,25	5,5

\*Schedule 40 pipe 150lb flanges.