



Service Report SR 105-12  
Thermasource  
Rig 108, Arbuckle, California  
Lee C. Moore Order 15301  
26 October 2012

Date: 26 October 2012  
Owner / Rig: Thermasource / Rig 108  
Description: 142ft. Cantilever Mast with 8ft. Extension  
Mast Manufacturer / Model: Drilling Structures International, Inc.  
Mast Serial Number: M1000-142-5049-8232  
Service Orders: 15301  
Technician Report: E-4907

This report is written following service on the described equipment by Mr. Ryan Baxter during 22 - 24 October 2012 at the rig location near Arbuckle, California. The purpose of the service was to perform an API RP 4G Category III inspection of the mast and substructure. At the time of arrival, the rig was lowered and partially assembled.

The following items are recommended or were noted:

**A. Crown Assembly**

1. Install safety cables on crown saver blocks. No safety cables were present.
2. Greased number 1 (one) crown sheave, drawworks side, to facilitate rotation by hand.
3. Recommend padeyes under crown frame be identified with Safe Working Loads (SWL). Existing padeyes have no identification.
4. Replace sheave mounting plate on climber assist due to wireline cuts and poor condition. Recommend replacement with plate of improved design.
5. Replace bolts at climber assist due to inadequate length.

**B. Mast Stem**

1. Replace wireline survey sheave padeye on drawworks side spreader with one of proper design and machine-made holes.
2. Replace tong counterweight sheave padeyes due to torch-cut holes.

**C. Racking Platform**

1. Repair wireline cuts on front of racking platform tube frame, driller's and off-driller's sides. Fill with E-7018 electrodes and grind smooth.

**D. Substructure**

1. The substructure appears to be in good condition.

The mast and substructure appear to be in generally good condition. Upon completion of the corrective action recommended above, the structures will be recommended for operation.

Our inspection was made in conformity with field inspection procedures generally accepted in the drilling industry as necessary and appropriate for maintenance and operation of equipment of this kind and included visual examination to the extent practicable in the field. Such inspection, because of its nature, will not necessarily disclose every item requiring corrective action and this report is not to be construed as a representation by us that no item requiring corrective action other than those listed above exists.

LEE C. MOORE, A WOOLSLAYER COMPANY



Ryan Baxter  
Technician, Field Services



Steve Ellis  
Director, Field Services



### Drilling Mast

Items that do not need attention should be checked to indicate that the item was inspected. Items that are not applicable should be

<b>OK</b>	If okay	<b>X1</b>	Requires immediate attention	"Provide Comments Regarding Inspected Items"
<b>NA</b>	Not applicable	<b>X2</b>	Requires attention next move	
<b>U</b>	Unable to access	<b>X3</b>	Requires attention next maintenance	
<b>M</b>	Missing	<b>X4</b>	Requires attention when convenient	

**COMMENTS REGARDING INSPECTED ITEMS**

**1.0 Crown Assembly**

Make / Model: UNKNOWN DSI?

**1.1 Sheaves**

Number of Fastline Sheaves: <u>1</u>	Fastline Sheave Dia: <u>60</u>
Cross Over Sheaves: _____	Cross Over Sheave Dia: _____
Main Cluster Sheaves: <u>6</u>	Main Cluster Sheave Dia: <u>60</u>
Deadline Sheaves: _____	Deadline Sheave Dia: _____

Condition:

<b>OK</b>	Sheaves:	<u>#1 SHEAVE DWKS SIDE REQUIRED GREASE TO MOVE BY HAND - OK</u>
<b>OK</b>	Grooves in Gauge:	_____
<b>OK</b>	Spacers or Seals	_____
<b>OK</b>	Grease Fittings:	_____
<b>OK</b>	Bearings:	_____
<b>OK</b>	Drilling Line Guards:	_____

**1.2 Crown Platform:**

<b>OK</b>	Decking:	_____
<b>OK</b>	Holes Covered:	_____
<b>NA</b>	Safety Gate:	<u>NONE</u>
<b>OK</b>	Ladder Access:	_____
<b>OK</b>	Handrails:	_____
<b>OK</b>	Frame Straight:	_____
<b>OK</b>	Welds:	_____
<b>OK</b>	Bolts and Nuts:	_____

**1.3 Crown Support Beams:**

<b>OK</b>	Beams Straight:	_____
<b>OK</b>	Pins & Bolts:	_____
<b>OK</b>	Safety Pins / Keepers:	_____
<b>OK</b>	Welds:	_____

**1.4 Additional Sheave Assemblies in Crown:**

	Name:	_____
<b>NA</b>	Condition:	_____

**1.5 Pad-eyes Under the Crown Platform:**

<b>X4</b>	SWL Marked:	<u>NOT MARKERD FROM OEM.</u>
<b>OK</b>	Welds:	_____
<b>OK</b>	Pin Holes	_____

**COMMENTS REGARDING INSPECTED ITEMS**

1.6 Fall Arrest / Climbing Assist Device Mounting:

<b>OK</b>	Support Pole:	_____
<b>OK</b>	Base:	_____
<b>X1</b>	Sheave Attachment:	WIRE ROPE WEAR ON THE SHEAVE ATTACH PLATE
<b>X1</b>	Weight Bucket Attach:	BOLTS TOO SHORT
<b>OK</b>	Welds:	_____

1.7 Crown Saver Block(s):

<b>OK</b>	Safety Mesh:	_____
<b>NA</b>	Safety Cable:	NO SAFETY DEVICE INSTALLED FROM MANUFACTURER
<b>OK</b>	Block(s) Condition:	_____
<b>OK</b>	Attachment Strapping:	_____
<b>OK</b>	Strapping Welds:	_____

Number of Visible Marks Applied: \_\_\_\_\_

**2.0 Mast Legs:**

2.1 Front Leg, Drillers Side:

<b>OK</b>	Leg Straight	_____
<b>OK</b>	Pin Connections:	_____
<b>OK</b>	Pin Hole(s):	_____
<b>OK</b>	Pins:	_____
<b>OK</b>	Safety Pins / Keepers:	_____
<b>OK</b>	Welds:	_____

2.2 Front Leg, Off Drillers Side:

<b>OK</b>	Leg Straight	_____
<b>OK</b>	Pin Connections:	_____
<b>OK</b>	Pin Hole(s):	_____
<b>OK</b>	Pins:	_____
<b>OK</b>	Safety Pins / Keepers:	_____
<b>OK</b>	Welds:	_____

2.3 Rear Leg, Drillers Side:

<b>OK</b>	Leg Straight	_____
<b>OK</b>	Pin Connections:	_____
<b>OK</b>	Pin Hole(s):	_____
<b>OK</b>	Pins:	_____
<b>OK</b>	Safety Pins / Keepers:	_____
<b>OK</b>	Welds:	_____

2.4 Rear Leg, Off Drillers Side:

<b>OK</b>	Leg Straight	_____
<b>OK</b>	Pin Connections:	_____
<b>OK</b>	Pin Hole(s):	_____
<b>OK</b>	Pin(s)	_____
<b>OK</b>	Safety Pins / Keepers:	_____
<b>OK</b>	Welds:	_____

Number of Visible Marks Applied: \_\_\_\_\_

**COMMENTS REGARDING INSPECTED ITEMS**

**3.0 Spreaders (Back Panel Trusses):**

- Members Straight: \_\_\_\_\_
- Bolts: \_\_\_\_\_
- Pin/Bolt Hole(s): \_\_\_\_\_
- Pins: \_\_\_\_\_
- Safety Pins / Keepers: \_\_\_\_\_
- Welds: \_\_\_\_\_

Number of Visible Marks Applied: \_\_\_\_\_

**4.0**

- Members Straight: \_\_\_\_\_
- Welds: \_\_\_\_\_

Number of Visible Marks Applied: \_\_\_\_\_

**5.0 Mast Feet or Pivots:**

- Condition: \_\_\_\_\_
- Pin Hole(s): \_\_\_\_\_
- Pins: \_\_\_\_\_
- Safety Pins / Keepers: \_\_\_\_\_
- Welds: \_\_\_\_\_

Number of Visible Marks Applied: \_\_\_\_\_

**6.0 Deadline Anchor Mounting: (Reference API RP 8B)**

- Supports: \_\_\_\_\_
- Bolts: \_\_\_\_\_
- Anchor Mounting Welds: \_\_\_\_\_
- Brass Inserts: \_\_\_\_\_

Number of Visible Marks Applied: \_\_\_\_\_

**7.0 A - Frame / Gin Pole:**

7.1 Driller's Side Legs:

- Leg Straight: SMALL DING IN LOWER SECTION FLANGE OF BEAM , WELDER STRAIGHTENED. \_\_\_\_\_
- Pin Hole(s): \_\_\_\_\_
- Pins: \_\_\_\_\_
- Safety Pins / Keepers: \_\_\_\_\_
- Welds: \_\_\_\_\_

7.2 Off Driller's Side Legs:

- Leg Straight: \_\_\_\_\_
- Pin Hole(s): \_\_\_\_\_
- Pins: \_\_\_\_\_
- Safety Pins / Keepers: \_\_\_\_\_
- Welds: \_\_\_\_\_

7.3 Spreaders Or Trusses:

- Members: \_\_\_\_\_
- Welds: \_\_\_\_\_

7.4 Upper Connections:

- Members: \_\_\_\_\_
- Welds: \_\_\_\_\_

**COMMENTS REGARDING INSPECTED ITEMS**

7.5 Lower Connections:

<b>OK</b>	Pin Connections:	
<b>OK</b>	Pin Hole(s):	
<b>OK</b>	Pins:	
<b>OK</b>	Safety Pins / Keepers:	
<b>OK</b>	Welds:	

Number of Visible Marks Applied: \_\_\_\_\_

**See Section 10.0 for Raising Sheave Check List.**

8.0 Working Platforms:

8.1 Pipe Racking Platform:

<b>OK</b>	Frame Straight:	
<b>OK</b>	Pin Hole(s):	
<b>OK</b>	Pins	
<b>OK</b>	Safety Pins / Keepers:	
<b>OK</b>	Frame Welds:	
<b>OK</b>	Working Platform:	
<b>X2</b>	Landing Platform:	ROPE WEAR IN 3 SPOTS ON FRAME, RECOMMEND FILL W/ 7018 ROD
<b>OK</b>	Handrails:	
<b>OK</b>	Ladder Access:	
<b>OK</b>	Fingers Straight:	
<b>OK</b>	Finger Welds:	
<b>OK</b>	Finger Safety Line(s)	
<b>OK</b>	Hoist Mounting:	

Number of Visible Marks Applied: \_\_\_\_\_

8.2 Casing Stabbing Board:

<b>NA</b>	Frame Straight:	
<b>NA</b>	Welds:	
<b>NA</b>	Handrails:	
<b>NA</b>	Working Platform:	
<b>NA</b>	Hoisting Assembly:	
<b>NA</b>	Hoist Mounting:	
<b>NA</b>	Lower Travel Stops:	
<b>NA</b>	Pin or Bolt Holes:	
<b>NA</b>	Pins or Bolts:	
<b>NA</b>	Safety Pins / Keepers:	

Number of Visible Marks Applied: \_\_\_\_\_

8.3 Tubing Support / Belly Board:

<b>NA</b>	Frame Straight:	
<b>NA</b>	Welds:	
<b>NA</b>	Handrails:	
<b>NA</b>	Pin Holes:	
<b>NA</b>	Pins:	
<b>NA</b>	Safety Pins / Keepers:	
<b>NA</b>	Support Cables:	
<b>NA</b>	Cable Connections:	

Number of Visible Marks Applied: \_\_\_\_\_



**COMMENTS REGARDING INSPECTED ITEMS**

**9.0 Ladders:**

<b>OK</b>	Vertical Rails Straight:	_____
<b>OK</b>	Rails In Alignment:	_____
<b>OK</b>	Ladder Stand Offs:	_____
<b>OK</b>	Stand Off Connections:	_____
<b>OK</b>	Rail Welds:	_____
<b>OK</b>	Rungs:	_____
<b>OK</b>	Rung Welds:	_____
<b>OK</b>	Rung Spacing:	_____
<b>U</b>	Access at Rig Floor:	NOT ABLE TO CHECK IN THE HORIZONTAL POSITION
<b>NA</b>	Cage:	NONE
<b>OK</b>	Toe Clearance:	_____

Number of Visible Marks Applied: \_\_\_\_\_

**10.0 Raising and Telescoping System**

10.1 Raising Line System: (Reference API 9B)

<b>OK</b>	Wireline	_____
<b>OK</b>	Wireline Sockets:	_____
<b>OK</b>	Pins:	_____
<b>OK</b>	Safety Pins / Keepers:	_____
<b>OK</b>	Sheaves Turn Freely:	_____
<b>OK</b>	Sheaves:	_____
<b>OK</b>	Grooves in Gauge:	_____
<b>OK</b>	Spacers or Seals	_____
<b>OK</b>	Grease Fittings:	_____
<b>U</b>	Bearings:	URNS FREE
<b>NA</b>	Line Guards:	NONE
<b>OK</b>	Welds:	_____
<b>OK</b>	Equalizer Assembly:	_____

Number of Visible Marks Applied: \_\_\_\_\_

10.2 Hydraulic or Telescoping System:

Hydraulic Cylinders - Raising:

<b>NA</b>	Seals:	_____
<b>NA</b>	Main Ram:	_____
<b>NA</b>	Cylinder Hinge Points:	_____
<b>NA</b>	Hinge Pin Hole(s):	_____
<b>NA</b>	Hinge Pins:	_____
<b>NA</b>	Safety Pins / Keepers:	_____
<b>NA</b>	Hydraulic Hoses:	_____
<b>NA</b>	Hose Connections:	_____
<b>NA</b>	Bleed Valve:	_____

Hydraulic Cylinder(s) - Telescoping:

<b>NA</b>	Seals:	_____
<b>NA</b>	Main Ram:	_____
<b>NA</b>	Cylinder Hinge Points:	_____
<b>NA</b>	Pin Hole(s):	_____
<b>NA</b>	Pins:	_____
<b>NA</b>	Safety Pins / Keepers:	_____
<b>NA</b>	Hydraulic Hoses:	_____
<b>NA</b>	Hose Connections:	_____
<b>NA</b>	Cylinder Stabilizers:	_____
<b>NA</b>	Bleed Valve:	_____
<b>NA</b>	Lubrication:	_____

**COMMENTS REGARDING INSPECTED ITEMS**

Mast Guides:

NA Cleaned: \_\_\_\_\_  
 NA Lubricated: \_\_\_\_\_

Number of Visible Marks Applied: \_\_\_\_\_

**11.0 Locking Device & Seats - Telescoping Masts:**

NA Pin Hole(s): \_\_\_\_\_  
 NA Pins: \_\_\_\_\_  
 NA Safety Pins / Keepers: \_\_\_\_\_  
 NA Bars / Dogs or Pawls: \_\_\_\_\_  
 NA Seats: \_\_\_\_\_  
 NA Mechanism: \_\_\_\_\_

Number NA \_\_\_\_\_

**12.0 Tong Counterweights:**

OK Guides: \_\_\_\_\_  
 OK Weight Device: \_\_\_\_\_  
 OK Sheaves/Shafts: PADEYES ARE TORCH CUT AND ATTACHMENT IS NOT TYPICAL- SEE PHOTO  
 OK Wirelines: \_\_\_\_\_  
 OK Cable Clamps: \_\_\_\_\_  
 OK Welds: \_\_\_\_\_

Number of Visible Marks Applied: \_\_\_\_\_

**13.0 Miscellaneous Sheave Assemblies:**

OK Clevis/Shackle: \_\_\_\_\_  
 X3 Mast Pad-eye: TORCH CUTS IN TCW PADEYES, WIRELINE PADEYE HAD BAD WELD AND TORCHED  
 OK Sheaves: \_\_\_\_\_  
 U Bearings: TURNS FREE  
 U Shafts: TURNS FREE  
 OK Sheave Bolt: \_\_\_\_\_  
 OK Side Plate Bolts: \_\_\_\_\_  
 OK Bolt Safety Pins: \_\_\_\_\_  
 OK Grease Fittings: \_\_\_\_\_  
 NA Safety Line: NONE ONSITE DURING THE INSPECTION

**14.0 Mast Boom Assembly:**

NA Mounting Brackets: \_\_\_\_\_  
 NA Sheaves: \_\_\_\_\_  
 NA Boom Pole: \_\_\_\_\_  
 NA Support Cable/Clamps: \_\_\_\_\_  
 NA Bolts/Nuts: \_\_\_\_\_  
 NA Sheave Shaft: \_\_\_\_\_  
 NA Bolt Safety Pins: \_\_\_\_\_  
 NA Grease Fittings: \_\_\_\_\_

Number of Visible Marks Applied: \_\_\_\_\_

**15.0 Ancillary Equipment:**

15.1 Mud Line Clamps:

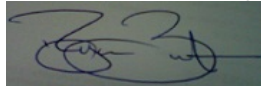
OK Pipe Clamps: \_\_\_\_\_  
 OK Leg Clamps: \_\_\_\_\_  
 OK Welds: \_\_\_\_\_  
 OK Bolts / Nuts: \_\_\_\_\_



**COMMENTS REGARDING INSPECTED ITEMS****17.0 Comments, Sketches, and / or Pictures:**

Our inspection was made in conformity with field inspection procedures generally accepted in the drilling industry as necessary and appropriate for maintenance and operation of equipment of this kind and included visual examination to the extent practicable in the field. Such inspection, because of its nature, will not necessarily disclose every item requiring corrective action and this report is not to be construed as a representation by us that no other item requiring corrective action other than those listed above exists.

Inspector's Signature: \_\_\_\_\_



Date: \_\_\_\_\_ 23-Oct-2012

Owner Representative's Signature: \_\_\_\_\_

Date: \_\_\_\_\_



**SUBSTRUCTURES**

Items that do not need attention should be checked to indicate that the item was inspected. Items that are not applicable should be marked in the box as "NA" (not applicable). Items that are warped, worn, damaged, cracked welds, rusted, bent, in need of repair or replacement, or otherwise in need of further attention, mark an "X" in the box and provide comments on the inspected items.

<b>OK</b>	If okay	<b>X1</b>	Requires immediate attention	"Provide Comments Regarding Inspected Items"
<b>NA</b>	Not applicable	<b>X2</b>	Requires attention next move	
<b>U</b>	Unable to access	<b>X3</b>	Requires attention next maintenance	
<b>M</b>	Missing	<b>X4</b>	Requires attention when convenient	

**COMMENTS REGARDING INSPECTED ITEMS**

**1.0 Shoes, Pedestals:**

<b>OK</b>	Pin Connections:	_____
<b>OK</b>	Pin Holes:	_____
<b>OK</b>	Bolt Connections:	_____
<b>OK</b>	Bolt Holes:	_____
<b>OK</b>	Pins / Bolts:	_____
<b>OK</b>	Safety Pins:	_____
<b>OK</b>	Support Beams:	_____
<b>OK</b>	Welds:	_____
Number of Visible Marks Applied:		_____

**2.0 Floor Area:**

<b>OK</b>	Floor Plates:	_____
<b>OK</b>	Handrails & Toe Boards:	_____
<b>OK</b>	Handrail Connections:	_____
<b>OK</b>	Setback Material:	_____
<b>OK</b>	Floor Bracing:	_____
<b>OK</b>	Welds:	_____
Number of Visible Marks Applied:		_____

**3.0 Sub - Spreaders and Rotary Beams:**

<b>OK</b>	Rotary Beams:	_____
<b>OK</b>	Spreaders:	_____
<b>OK</b>	Pin Connections:	_____
<b>OK</b>	Pin Holes:	_____
<b>OK</b>	Pins:	_____
<b>OK</b>	Pad-eyes:	_____
<b>OK</b>	Welds:	_____
Number of Visible Marks Applied:		_____

**4.0 Deadline Anchor Mounting:**

<b>OK</b>	Supports:	_____
<b>OK</b>	Bolts:	_____
<b>OK</b>	Flooring:	_____
<b>NA</b>	Breakover Assembly:	_____
<b>OK</b>	Handrails:	_____
<b>OK</b>	Welds:	_____
Number of Visible Marks Applied:		_____

**COMMENTS REGARDING INSPECTED ITEMS**

**5.0 Substructure Components:**

- OK** Beams Straight: \_\_\_\_\_
- OK** Cross Braces: \_\_\_\_\_
- OK** Pin / Bolt Holes: \_\_\_\_\_
- OK** Pin / Bolts: \_\_\_\_\_
- OK** Safety Pins: \_\_\_\_\_
- OK** Pull Back Posts: \_\_\_\_\_
- OK** Drawworks Tiedowns: \_\_\_\_\_
- OK** Welds: \_\_\_\_\_
- OK** BOP Anchor Pad-Eyes: \_\_\_\_\_
- OK** Pad-eyes: \_\_\_\_\_

Number of Visible Marks Applied: \_\_\_\_\_

**6.0 Engine Foundation:**

- OK** Support Beams: \_\_\_\_\_
- OK** Cross Braces: \_\_\_\_\_
- OK** Pin / Bolt Holes: \_\_\_\_\_
- OK** Pins / Bolts: \_\_\_\_\_
- OK** Safety Pins: \_\_\_\_\_
- OK** Pad-eyes: \_\_\_\_\_

Number of Visible Marks Applied: \_\_\_\_\_

**7.0 Engine Foundation Spreaders:**

- OK** Beams: \_\_\_\_\_
- OK** Cross Braces: \_\_\_\_\_
- OK** Pins / Bolt Holes: \_\_\_\_\_
- OK** Pins / Bolts: \_\_\_\_\_
- OK** Safety Pins: \_\_\_\_\_
- OK** Welds: \_\_\_\_\_

Number of Visible Marks Applied: \_\_\_\_\_

**8.0 BOP Trolley Beams:**

- NA** Beams: \_\_\_\_\_
- NA** Pin Holes: \_\_\_\_\_
- NA** Pins: \_\_\_\_\_
- NA** Safety Pins: \_\_\_\_\_
- NA** Welds: \_\_\_\_\_

Number of Visible Marks Applied: \_\_\_\_\_

**9.0 Raising Equipment:**

- NA** Pin Connections: \_\_\_\_\_
- NA** Pin Holes: \_\_\_\_\_
- NA** Pins: \_\_\_\_\_
- NA** Wirelines: \_\_\_\_\_
- NA** Sheaves: \_\_\_\_\_
- NA** Bearings: \_\_\_\_\_
- NA** Seals: \_\_\_\_\_
- NA** Grease Fittings: \_\_\_\_\_
- NA** Hydraulic Winches: \_\_\_\_\_
- NA** Hydraulic Cylinders: \_\_\_\_\_
- NA** Hydraulic Hoses: \_\_\_\_\_
- NA** Cylinder Hinge: \_\_\_\_\_

Number of Visible Marks Applied: \_\_\_\_\_

**COMMENTS REGARDING INSPECTED ITEMS**

**10.0 Stairs / Landings / Flooring / Handrails:**

<input type="checkbox"/> <b>OK</b>	Welds:	_____
<input type="checkbox"/> <b>OK</b>	Pin / Bolt Holes:	_____
<input type="checkbox"/> <b>OK</b>	Pins / Bolts:	_____
<input type="checkbox"/> <b>OK</b>	Floor Plating:	_____
<input type="checkbox"/> <b>OK</b>	Stair Tread Spacing	_____
<input type="checkbox"/> <b>OK</b>	Handrail Sockets:	_____
	Number of Visible Marks Applied:	_____

**11.0 Paint / Coating**

<input type="checkbox"/> <b>OK</b>	Condition:	_____
		_____
		_____
		_____

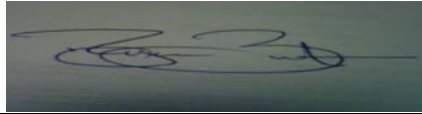
**12.0 Skidding Equipment**

<input type="checkbox"/> <b>OK</b>	Pad-eyes:	_____
<input type="checkbox"/> <b>OK</b>	Pins:	_____
<input type="checkbox"/> <b>OK</b>	Beam Clamps:	_____
<input type="checkbox"/> <b>NA</b>	Jacks:	_____
<input type="checkbox"/> <b>NA</b>	Jacking Motors:	_____
<input type="checkbox"/> <b>NA</b>	Jacking Rack:	_____



**13.0 Comments, Drawings, and / or Pictures:**

Our inspection was made in conformity with field inspection procedures generally accepted in the drilling industry as necessary and appropriate for maintenance and operation of equipment of this kind and included visual examination to the extent practicable in the field. Such inspection, because of its nature, will not necessarily disclose every item requiring corrective action and this report is not to be construed as a representation by us that no other item requiring corrective action other than those listed above exists.

**Inspector's Signature:** \_\_\_\_\_**Date:** \_\_\_\_\_ 23-Oct-2012**Owner Representative's Signature:** \_\_\_\_\_**Date:** \_\_\_\_\_

