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# **CONOCO/PHILLIPS COMPANY EBUSINESS**

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**Watkins 4-64-19-1H  
WILDCAT  
Arapahoe County , Colorado**

**Cement Intermediate Casing**  
**25-Aug-2013**

**Job Site Documents**

# HALLIBURTON

## JOB SAFETY ANALYSIS

RIG: 2008 M4P 280  
 DATE: 8-25-13  
 SO #: 400692339

CUSTOMER: Conoco  
 JOB TYPE: Intermediate  
 SERVICE SUPERVISOR: Hatt Belushi

"SAFETY HUDDLE"		TASK	Potential Accidents or Hazards	Recommendation to Eliminate or Reduce Potential Hazards
Travel to Location	1.	Discuss route to location.	1. <u>rain, fog, other drivers</u>	1. <u>Safe following distance</u>
	2.	Observe weather and road conditions.	2. <u>Dark</u>	2. <u>Slower speeds</u>
	3.	Special conditions (hills, mud, etc)	3. <u>wildlife in roads hit</u>	3. <u>watch shadows of roads</u>
	4.		4.	4. <u>Defensive driving</u>
	5.		5.	5. <u>Full walk around Pre-Trip</u>
Emergency Procedures	1.	Discuss meeting area.	1. <u>Blow out, Fire</u>	1. <u>Enter location master</u>
	2.	Designated emergency driver.	2. <u>Someone hurt</u>	2. <u>Supervisor or Safety guy</u>
	3.	Emergency route to hospital etc.	3.	3. <u>Direct route Advance</u>
	4.	Emergency phone numbers.	4.	4. <u>911</u>
	5.		5.	5.
Spot Equipment	1.	Spot pump truck.	1. <u>Roll over equip.</u>	1. <u>2 spotters</u>
	2.	Spot bulk equipment.	2. <u>Hit someone</u>	2. <u>Radio contact</u>
	3.		3. <u>Back into truck</u>	3. <u>Hazard Hunt</u>
	4.		4.	4.
	5.		5.	5.
Lay Iron to Rig	1.	Discuss route of iron to rig. (Clear path)	1. <u>Trip Hazard, trenches</u>	1. <u>Direct route</u>
	2.	Decide on required iron (hose) to lay	2. <u>to much iron</u>	2. <u>Kick in iron, on ground</u>
	3.	Discuss lifting procedure.	3. <u>Hurt back</u>	3. <u>Use legs, safe a back</u>
	4.	Hook up bulk truck.	4. <u>Loose fitting blow or spills</u>	4. <u>Double check all wings</u>
	5.		5. <u>Pinch hoses in route</u>	5. <u>Hands on top</u>
Pick Up Iron to Rig Floor	1.	Use of air tugger or cat line.	1. <u>Load drop &amp; hit someone</u>	1. <u>5 kg away from overhead legs</u>
	2.	Stabbing plug container	2. <u>pinch hoses between csg</u>	2. <u>Use leg lines</u>
	3.	Rigging iron to rig	3.	3. <u>Hands on top of head</u>
	4.	Swapping iron from rig to pump truck	4.	4.
	5.		5.	5.
Preparing to Pump Job	1.	Priming up pump truck.	1. <u>Spills, loose fittings</u>	1. <u>check all fittings + valves</u>
	2.	Mix Chemicals.	2. <u>eye irritation</u>	2. <u>Wear glasses, goggles</u>
	3.	Pressure testing lines.	3. <u>Loose fittings</u>	3. <u>Double check all fittings +</u>
	4.		4.	4. <u>buffer zone</u>
	5.		5.	5.



"SAFETY HUDDLE"		TASK		Potential Accidents or Hazards		Recommendation to Eliminate or Reduce Potential Hazards	
Run Job	1.	Pump spacer and cement	1.	Pump wrong amt, spills	1.	cut out pads, eyes on task	
	2.	Drop plug	2.	drop wrong plug	2.	double check plugs	
	3.	Displace	3.	under over displace	3.	run it's twice	
	4.	Land plug	4.	over pressure	4.	set kickbacks	
	5.	Release pressure	5.	release to fast	5.	release loops the rip	
Rig Down	1.	Removing plug container.	1.	pick hook in hole	1.	hands on top, use gloves	
	2.	Wash up pump truck	2.	spills	2.	double check all valves	
	3.	Disconnect bulk truck	3.	psi blow in face	3.	release all lines	
	4.	Rack up iron (hose)	4.	pick hook in iron rack	4.	hands on top with gloves	
	5.		5.		5.		
Travel "Home"	1.	Discuss route to camp.	1.	forget Pre-trip	1.	Fill Pre-trip	
	2.	Observe weather and road conditions.	2.	Sunny blind eyes	2.	Sunglasses, slow speeds	
	3.	Special conditions (hills, mud, etc)	3.	cloud drives	3.	Patience, driving	
	4.		4.	wild life	4.	wild shadows	
	5.		5.		5.		
Miscellaneous 1	1.	Blow down bulk trucks.	1.	to much psi	1.	ignore max	
	2.	Wash equipment.	2.	Slips & trip wet floors	2.	walk don't run	
	3.	Post trip.	3.	forget Postrip	3.	Fill work around Post	
	4.	Maintain equipment.	4.		4.	Fix all problems	
	5.		5.		5.		
Miscellaneous 2	1.		1.		1.		
	2.		2.		2.		
	3.		3.		3.		
	4.		4.		4.		
	5.		5.		5.		
SAFETY EQUIPMENT REQUIRED TO DO THIS JOB:							
Hard Hats?	<input checked="" type="checkbox"/>	Gas Monitors?	<input checked="" type="checkbox"/>	Barricades?	<input checked="" type="checkbox"/>	MSDS Sheets?	<input checked="" type="checkbox"/>
Safety Shoes?	<input checked="" type="checkbox"/>	Safety Harness?	<input checked="" type="checkbox"/>	Fire Extinguisher?	<input checked="" type="checkbox"/>		
Safety Glasses?	<input checked="" type="checkbox"/>	Face Shields?	<input checked="" type="checkbox"/>	Lock-Out/Tag-Out?	<input checked="" type="checkbox"/>		
Cotton Gloves?	<input checked="" type="checkbox"/>	Goggles?	<input checked="" type="checkbox"/>	Work-Permit Required?	<input checked="" type="checkbox"/>		



## The Road to Excellence Starts with Safety

Sold To #: 352431	Ship To #: 3092714	Quote #:	Sales Order #: 900692339
Customer: CONOCO/PHILLIPS COMPANY EBUSINESS	Customer Rep: Evans, Wes		
Well Name: Watkins	Well #: 4-64-19-1H	API/UWI #:	
Field: WILDCAT	City (SAP): BENNETT	County/Parish: Arapahoe	State: Colorado
Legal Description: Section 19 Township 4S Range 64W			
Contractor: H&P	Rig/Platform Name/Num: H&P 280		
Job Purpose: Cement Intermediate Casing			
Well Type: Development Well	Job Type: Cement Intermediate Casing		
Sales Person: GROFF, THEODORE	Srv Supervisor: BULINSKI, MATTHEW	MBU ID Emp #: 483865	

## Job Personnel

HES Emp Name	Exp Hrs	Emp #	HES Emp Name	Exp Hrs	Emp #	HES Emp Name	Exp Hrs	Emp #
barrera, Jorge	0.0	1234567	BULINSKI, MATTHEW J	0.0	483865	Kadir, Zam	0.0	1234568
OSBORNE, DANIEL Ryan	0.0	551419	Tavilili, Saiaig	0.0	545471	WHEELER, JUSTIN W	0.0	196470
WILEY, JAMES A	0.0	440080						

## Equipment

HES Unit #	Distance-1 way	HES Unit #	Distance-1 way	HES Unit #	Distance-1 way	HES Unit #	Distance-1 way
10857080C	50 mile	10866497C	50 mile	11064535	50 mile	11542778	50 mile
11605598	50 mile	11605599	50 mile	11633846C	50 mile	11764737	50 mile

## Job Hours

Date	On Location Hours	Operating Hours	Date	On Location Hours	Operating Hours	Date	On Location Hours	Operating Hours

TOTAL Total is the sum of each column separately

## Job

## Job Times

Formation Name	Formation Depth (MD)	Top	Bottom	Form Type	Job depth MD	Job Depth TVD	Wk Ht Above Floor	Perforation Depth (MD)	From	To	Called Out	Date	Time	Time Zone
				BHST	8031. ft	8031. ft					On Location	24 - Aug - 2013	23:00	MST
											Job Started	25 - Aug - 2013	00:00	MST
											Job Completed	25 - Aug - 2013	00:00	MST
											Departed Loc	25 - Aug - 2013	00:00	MST

## Well Data

Description	New / Used	Max pressure psig	Size in	ID in	Weight lbm/ft	Thread	Grade	Top MD ft	Bottom MD ft	Top TVD ft	Bottom TVD ft
8-3/4" Open Hole				8.75				8041.	8006.		
7" Casing	Unknown		7.	6.094	32.	BTC	P-110	.	8006.		
9-5/8" Casing	Mixed		9.625	8.921	36.	STC	J-55	.	1988.		

Sales/Rental/3<sup>rd</sup> Party (HES)

Description	Qty	Qty uom	Depth	Supplier
CMT CASING EQUIPMENT BOM	0	JOB		
SHOE,FLT,7 8RD,2-3/4 SS II VLV	1	EA		
CLR,FLT,7 LG 8RD 23-26PPF,2-3/4	1	EA		
CENTRALISER SLIDER II,#0700-0834S	80	EA		
CLAMP - LIMIT - 7 - HINGED -	1	EA		
KIT,HALL WELD-A	1	EA		
MILEAGE FOR CEMENTING CREW,ZI	100	MI		
ZI FUEL SURCHG-CARS/PICKUPS<1 1/2TON	100	MI		

## Tools and Accessories

Type	Size	Qty	Make	Depth	Type	Size	Qty	Make	Depth	Type	Size	Qty	Make
------	------	-----	------	-------	------	------	-----	------	-------	------	------	-----	------



Guide Shoe					Packer					Top Plug			
Float Shoe				7937.2	Bridge Plug					Bottom Plug			
Float Collar					Retainer					SSR plug set			
Insert Float										Plug Container			
Stage Tool										Centralizers			

## Miscellaneous Materials

Gelling Agt		Conc		Surfactant		Conc		Acid Type		Qty		Conc	%
Treatment Fld		Conc		Inhibitor		Conc		Sand Type		Size		Qty	

## Fluid Data

## Stage/Plug #: 1

Fluid #	Stage Type	Fluid Name	Qty	Qty uom	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sk	Mix Fluid Gal/sk	Rate bbl/min	Total Mix Fluid Gal/sk
1	Clean Spacer III		40.00	bbl	10.5	.0	.0	.0	
	0.5 gal/bbl	SEM-7, 5 GAL PAIL (100003860)							
	0.5 gal/bbl	MUSOL(R) A, 5 GAL PAIL (100064220)							
2	EXTENDACEM B1	EXTENDACEM (TM) SYSTEM (452981)	480.0	sacks	12.	1.99	10.64		10.64
	0.2 %	SUPER CBL, 50 LB PAIL (100003668)							
	3 %	SALT, BULK (100003695)							
	10.64 Gal	FRESH WATER							
3	HalCem	HALCEM (TM) SYSTEM (452986)	130.0	sacks	15.8	1.52	6.19		6.19
	0.25 %	HR-5, 50 LB SK (100005050)							
	0.125 lbm	POLY-E-FLAKE (101216940)							
	6.19 Gal	FRESH WATER							

## Calculated Values

## Pressures

## Volumes

Displacement	286	Shut In: Instant		Lost Returns	0	Cement Slurry	205	Pad	
Top Of Cement	641.99	5 Min		Cement Returns	0	Actual Displacement	286	Treatment	
Frac Gradient		15 Min		Spacers	40	Load and Breakdown		Total Job	531

## Rates

Circulating	5	Mixing		5	Displacement	8	Avg. Job	6.5
Cement Left In Pipe	Amount	93 ft	Reason	Shoe Joint				
Frac Ring # 1 @	ID	Frac ring # 2 @	ID	Frac Ring # 3 @	ID	Frac Ring # 4 @	ID	

The Information Stated Herein Is Correct

Customer Representative Signature

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Field: WILDCAT	City (SAP): BENNETT	County/Parish: Arapahoe	State: Colorado
Legal Description: Section 19 Township 4S Range 64W			
Lat:		Long:	
Contractor: H&P		Rig/Platform Name/Num: H&P 280	
Job Purpose: Cement Intermediate Casing			Ticket Amount:
Well Type: Development Well		Job Type: Cement Intermediate Casing	
Sales Person: GROFF, THEODORE		Srv Supervisor: BULINSKI, MATTHEW	
		MBU ID Emp #: 483865	

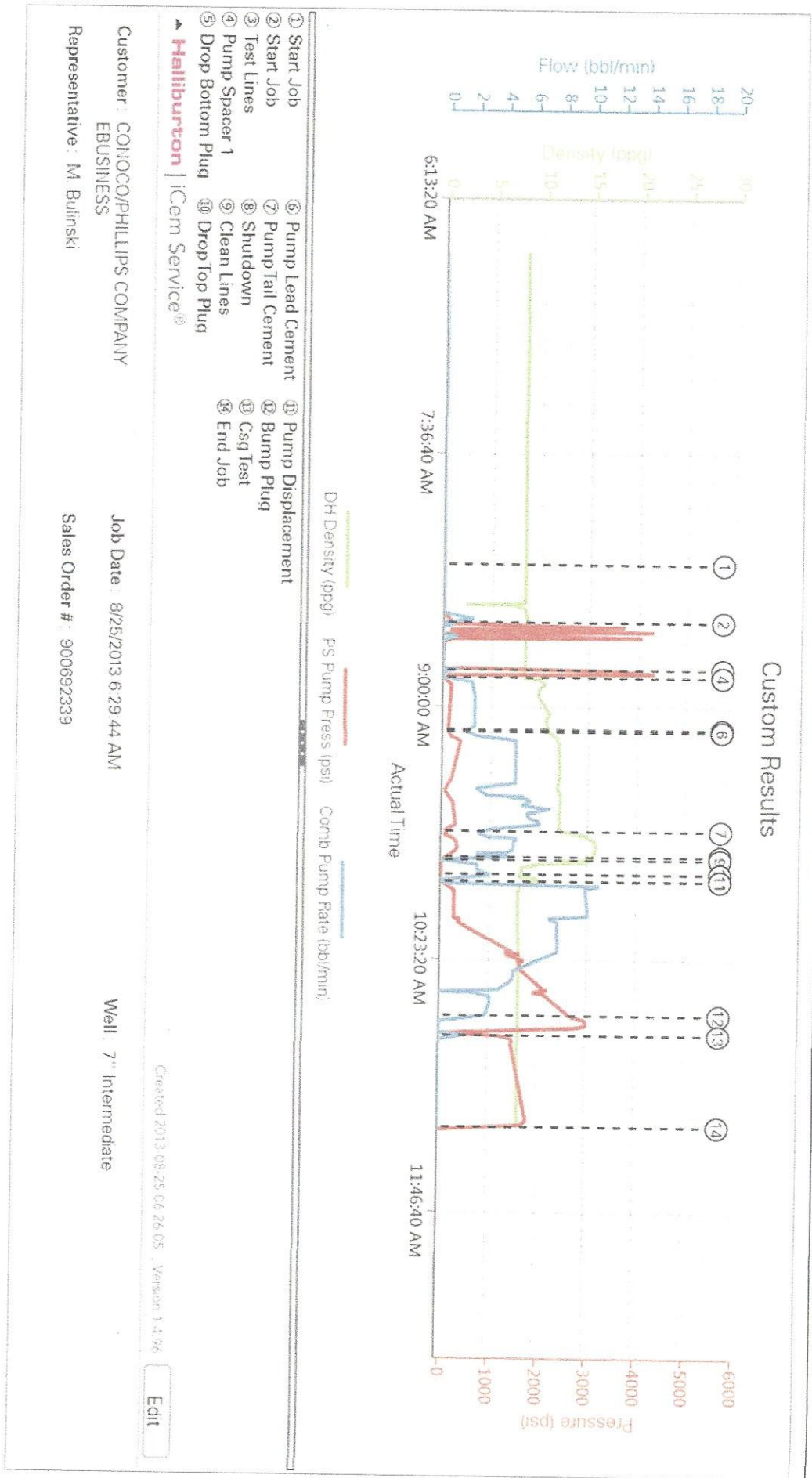
Activity Description	Date/Time	Cht #	Rate bbl/ min	Volume bbl		Pressure psig		Comments
				Stage	Total	Tubing	Casing	
Depart Yard Safety Meeting	08/25/2013 02:15							JSA on Pre-Tripping trucks and driving to Location
Arrive at Location from Service Center	08/25/2013 03:30							Arrived to Location 1.5hrs early... Rig still running Csg
Assessment Of Location Safety Meeting	08/25/2013 05:00							Hazard Hunt before spotting in trucks
Safety Meeting - Pre Rig-Up	08/25/2013 05:15							JSA with HES hands on rigging trucks and Iron to rig
Rig-Up Equipment	08/25/2013 05:30							
Rig-Up Completed	08/25/2013 06:15							
Safety Meeting - Pre Job	08/25/2013 07:45							JSA with Company Man, Rig hands, and HES hands on connecting iron to Csg and pump schedual
Start Job	08/25/2013 08:32							
Test Lines	08/25/2013 08:48							4000psi Pressure Test Lines to Rig Floor
Pump Spacer 1	08/25/2013 08:50		2	40			150.0	40bbl Clean Spacer, 10.5ppg, 3.86yield, 24.21gal/sk, Mixed Spacer on pump truck with rig water and 20gal Sem 7, 20gal Musol, 15gal D-air, using rig water and # verify by pressurized mud scales
Drop Bottom Plug	08/25/2013 09:08							Pre-Loaded Verify by Company Man



Activity Description	Date/Time	Cht #	Rate bbl/ min	Volume bbl		Pressure psig		Comments
				Stage	Total	Tubing	Casing	
Pump Lead Cement	08/25/2013 09:08		6	170	210		270.0	480sks Extendacem, 12ppg, 1.99yield, 10.64gal/sk, Mixed with rig water and # verify by pressurized mud scales
Pump Tail Cement	08/25/2013 09:41		6	35	245		335.0	130sks Halcem, 15.8ppg, 1.52yield, 6.19gal/sk, Mixed with rig water and # verify by pressurized mud scales
Shutdown	08/25/2013 09:49							
Clean Lines	08/25/2013 09:50							10bbls Wash lines
Drop Top Plug	08/25/2013 09:55							Pre-Loaded Verify by Company Man
Pump Displacement	08/25/2013 09:58		8	286	531		2500. 0	H2O displacement, Good returns throughout... 266bbls away Spacer to surface, giving 20bbls to surface total
Bump Plug	08/25/2013 10:42		3					Slowed down last 20bbls to land... Plug landed at 2560psi and brought to 3105psi for 3mins
Check Floats	08/25/2013 10:46							Floats held
Other	08/25/2013 10:48							1500psi Csg test 30mins
Safety Meeting - Pre Rig- Down	08/25/2013 11:25							JSA on rigging down bulk trucks and Iron from rig...
Rig-Down Equipment	08/25/2013 11:30							
Rig-Down Completed	08/25/2013 12:15							
Safety Meeting - Departing Location	08/25/2013 12:30							JSA on Pre-tripping trucks and driving back to Brighton Yard
Depart Location for Service Center or Other Site	08/25/2013 12:45							

## 2.0 Custom Graphs

### 2.1 Custom Graph





# HALLIBURTON

CONOCO/PHILLIPS COMPANY EBUSINESS

Watkins Intermediate  
900692339

## 1.1 Job Event Log

Time	Description	Graph Label	Downhole Density (ppg)	Pass-Side Pump Pressure (psi)	Combined Pump Rate (bbl/min)	Comment
08:13:42	Start Job	Start Job	8.36	-2.00	0.00	
08:32:42	Start Job	Start Job	8.44	34.00	0.00	
08:48:23	Test Lines	Test Lines	8.43	4305.00	0.00	4000psi Test
08:50:54	Pump Spacer 1	Pump Spacer 1	9.84	27.00	2.00	40bbl 10.5ppg Spacer
09:08:06	Drop Bottom Plug	Drop Bottom Plug	10.79	131.00	1.60	Pre-Loaded
09:08:52	Pump Lead Cement	Pump Lead Cement	11.33	118.00	1.50	480k's Extendacem, 12ppg
09:41:33	Pump Tail Cement	Pump Tail Cement	13.17	48.00	2.50	130k's Halcem, 15.8ppg
09:49:57	Shutdown	Shutdown	15.67	94.00	0.00	
09:50:59	Clean Lines	Clean Lines	13.72	-8.00	0.00	Wash Lines
09:55:44	Drop Top Plug	Drop Top Plug	8.14	39.00	3.40	Pre-Loaded
09:58:02	Pump Displacement	Pump Displacement	9.83	-2.00	0.00	H2O displacement, Spacer to surface at 266bbl's away
10:42:14	Bump Plug	Bump Plug	8.23	2974.00	0.00	2560psi up to 3105psi for 3mins
10:48:48	Other	Csg Test	8.06	1475.00	0.00	1500psi 30mins
11:19:01	End Job	End Job	8.06	-4.00	0.00	