

IADC WIRE LINE COURSE OUTLINE

<u>IADC WELLSHARP WELLSERVICE WIRE LINE</u>		
<u>COURSE OUTLINE</u>		
<u>DAY1</u>		
<i>TIME</i>	<i>Subject</i>	<i>Lesson plan</i>
8:00 - 9:00	Risk Awareness and Management :Potential Impacts of a Well Control Event Live/Dead Well , Risk Management Systematic risk ,Pre-job Communication , Handover for Tour and Hitch Change ,Safety Margin Selection , Bridging Documents , Emergency Equipment , Requirements procedures (MAASP)	Lesson plan -1
9:00 - 10:30	Installation of rings, flanges and connections , Load Bearing Considerations(requires lifting certifications , environmental factors) , Pressure Fundamentals (Types of pressure a. Hydrostatic pressure , b. Applied Pressures 1. Surface pressure a. SITP b. Annulus Pressure	Lesson plan -2
10:30 - 10:45	BREAK	
10:45 - 11:15	2. Pump Pressure 3. ECDs (Equivalent Circulating Densities) 4. Trapped Pressure 5. Swab/surge c. Formation pressure d. Differential pressure e. Fracture pressure	Lesson plan -3
11:15-12:00	f. Bottom hole pressure 1. Balanced 2. Underbalanced 3. Overbalanced, (MASP) , Kill Mud Weight , U-tubing , Principles(Tubing Collapse and Casing Burst) , Given well data, complete a well data question form (wellbore profile , deviation)	Lesson plan -4
12:00-12:30	Launch Time	
12:30-02:00	pre-recorded information (Well configuration " Top and bottom of perforations , Packer/tool locations) secure the well (Wellhead / Well Control Stack / Christmas tree valves – function test) Barriers : Philosophy and Operation of Barrier Systems(Barriers and barrier envelope ,Purpose of barriers) Types of Barriers (fluid , mechanical)	Lesson plan -5
02:00-3:00	Levels of Barriers (Hierarchy , primary ,secondary and tertiary) Barrier Management (test criteria , monitoring and detecting failure) Primary barrier :Stuffing Box/Pack Off/Grease Injection , secondary barrier : BOP , Tertiary barrier : X-tree cutting valve , Wire line shear seal , X-tree	Lesson plan -6
03:00-03:15	BREAK	

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03:15-04:00	Decision Tree (emergency BOP operations , Action to take) , Influx : Detention , Causes , Influx detection (signs and indicators)	Lesson plan -7
04:00-05:00	Importance of Influx Management in Open Hole Operations (Managing Risk , Consequences of not managing influx "pollution" Pressure and Volume Relationship (Boyles Law) " Gas Volume/Pressure .	Lesson plan -8
05:05	END OF TRAINING DAY	
<u>DAY 2</u>		
08:00-09:45	Completion and Workover Fluids (purpose, corrosion) Brine requirements . Fluid properties (Density , viscosity ,PH, saturation ,Crystallization Fluid Flow Behavior (friction pressure loss , geometry) Fluid Types (Gas , oil , water)	Lesson plan -9
09:45-10:00	BREAK	
10:00-11:00	Surface and Subsurface Wellbore Equipment Christmas Tree , BOP component stack (function, component , HCR & manual valve , Annular , Blind/shear , shear or cutter ram)	Lesson plan -10
11:00-12:00	Workstring and Production Tubing integrity(burst , collapse ,torsion) Completion Equipment Surface & sub-surface Controlled Sub-Surface Safety Valve (SCSSV) .	Lesson plan -11
12:00-12:30	LAUNCH TIME	
12:30-01:30	Packers , SSD , Gas lift mandrill Procedures: Pulling a gas lift valve or Opening sliding sleeve Wireline Open Hole Operations , Pre-operating Procedures(gauge run) Rigging Up and Deployment Into Well(space-out , Rig up , Tool string deployment) Well Control Drills ,	Lesson plan -12
01:30-03:15	Reasons for Wireline Operations : Reasons for Wireline Operations (Open hole , Cased hole , Slick line) Pressure Control Equipment Selection (selection and Impact Surface Equipment : Slick line (Types , limitation and handling ,	Lesson plan -13

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03:15-03:30	BREAK	
03:30-05:00	braided line (Types , limitation and handling) , Electric line (Types , limitation and handling, Components of Wireline Units (drum , brake , Measurement , Power packs , Cabin , Sheaves) ,	Lesson plan -14
05:00	END OF TRAINING DAY	
<u>DAY 3</u>		
08:00-09:45	Safety Systems and Emergency Shutdown devices (ESDs) Plugs (Type of Plug , service rating , Differential Pressure, Equalizer sub , Types of packers Completion Equipment (Gas lift mandrill and valve , Bridge Plugs)	Lesson plan -15
09:45-10:00	BREAK	
10:00-11:00	Wireline Pressure Control Equipment: Control Heads (line wiper , Stuffing Box/Pack off a. Manual b. Hydraulic	Lesson plan -16
11:00-12:00	Grease Injection Head " function , operation limit" , Chemical Injection Sub	Lesson plan -17
12:00-12:30	LAUNCH TIME	
12:30-02:00	Head Catcher, needle valve, bleed off sub Tool trap, Quick test sub	Lesson plan -18
02:00-02:15	BREAK	
02:15-03:30	Wireline Valves (Manual vs. Hydraulic), Wireline Valves (Conductor/Braided line rams) a. Line rams b. Shear seal rams	Lesson plan -19
03:30-05:00	Wireline Valves (Slick line) a. Line rams b. Shear seal rams (function ,configuration and limitation) , Pump-in Sub , Lubricator extension –riser , Wireline Shear Seal (purpose , critical parts	Lesson plan -20
05:05	END OF TRAINING DAY	

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<u>DAY 4</u>		
08:00-09:30	PCE Equipment (hoses , fitting and connections) Special Situations: Blockages and Trapped Pressure in Tubing / Wellbore , Hydrates , H2S consideration (detention , necessary equipment) , Describe and discuss conditions where pressure calculations exceed MASP	Lesson plan -21
09:30-09:45	BREAK	
09:45 :11:00	Drilling Operations(wire line rigged up on a drilling rig's well control system , Wireline Shear Seals(purpose ,last resort) Fishing wireline (tools and pressure control considerations)	Lesson plan -22
11:00-12:00	Well control "Various Action Drills" Organizing a Well Control Operation : personnel -Roles and Responsibilities , Plan Responses to Anticipated Well Control Scenarios	Lesson plan -23
12:00-12:30	LAUNCH TIME	
12:30-03:00	Testing : Pressure and Function Tests (purpose , Maximum safe working pressures of well control equipment , low & high pressure test) , BOP Testing (specific equipment , pressure test value) Testing of Completion Equipment (Packers , deep set plug , documentation	Lesson plan -24
03:15-03:30	BREAK	
03:30-05:00	Government, Industry and Company Rules, Order and Policies : API and ISO recommended practices, standards and bulletins pertaining to well control , Company/operator specific requirements Ancillary Considerations: Gas detector , fluid gas separator , Wellhead Control Panel	Lesson plan -25
05:00	END OF LAST TRAINING DAY	