

JOB SAFETY ANALYSIS (JSA) FORM					Rev 1 Feb 24
Unit/Area:	Specific Location:	Work Authorizer (if applicable):	Supervisor / Work Lead:	Date:	
Job Description for Tasks with High Potential Consequence (i.e., life-altering injuries or Consequence Level 1 process safety events including HC 1&2 events) (include Equipment Numbers as Practical):					
Check LSRA(s) that apply and review Start Work Check(s). Complete Page 2 with any additional task steps with high potential consequence or if there is no applicable LSRA.					
 Confined Space Entry Obtain authorization before entering a confined space ☐		 Bypassing Safety Controls Obtain authorization before overriding or disabling safety controls ☐		 Energy Isolation Verify isolation and zero energy before work begins ☐	
<ol style="list-style-type: none"> 1. I confirm energy sources are isolated 2. I confirm the atmosphere has been tested and is monitored 3. I check and use my breathing apparatus when required 4. I confirm there is an attendant standing by 5. I confirm a rescue plan is in place 6. I obtain authorization to enter 		<ol style="list-style-type: none"> 1. I understand and use safety-critical equipment and procedures which apply to my task 2. I obtain authorization before: <ul style="list-style-type: none"> • Disabling or overriding safety equipment • Deviating from procedures • Crossing a barrier 		<ol style="list-style-type: none"> 1. I have identified all energy sources 2. I confirm that hazardous energy sources have been isolated, locked, and tagged 3. I have checked there is zero energy and tested for residual or stored energy 4. I never remove or tamper with energy control devices without authorization 5. I confirm equipment is back to safe operating condition prior to re-energizing 	
 Excavation Obtain authorization before digging or entering excavations ☐		 Safe Mechanical Lifting Plan lifting operations and control the area ☐		 Hot Work Control flammables and ignition sources ☐	
<ol style="list-style-type: none"> 1. I obtain authorization prior to performing excavation / trenching / ground disturbance activities 2. I confirm underground utilities and structures are located, de-energized or protected 3. I confirm hazard controls and confined space entry as required 4. I monitor for changing conditions and exit as appropriate 		<ol style="list-style-type: none"> 1. I confirm that the equipment and load have been inspected and are fit for purpose 2. I only operate equipment that I am qualified to use 3. I establish and obey barriers and exclusions zones 4. I never walk under a suspended load 5. I understand the lift plan prior to starting work and keep hands off load unless authorized 6. I establish and maintain communication with lifting and rigging personnel 		<ol style="list-style-type: none"> 1. I identify and control ignition sources 2. Before starting any hot work: <ul style="list-style-type: none"> • I confirm flammable material has been removed or isolated • I obtain authorization 3. Before starting hot work in a hazardous area, I confirm: <ul style="list-style-type: none"> • A gas test has been completed • Gas will be monitored continually 	
 Working Around Mobile Equipment See and be seen; maintain a safe distance ☐		 Working at Height Protect yourself against a fall when working at height ☐		 Breaking Containment/OPE Manage ignition sources and exposure to energy & hazardous substances ☐	
<ol style="list-style-type: none"> 1. I plan work to separate workers and mobile equipment 2. I only operate mobile equipment if qualified and use spotters where required 3. I verify safety devices are functional on mobile equipment 4. I establish clear means of communication with equipment operator 5. I stay out of the equipment's exclusion zone while in operation 6. I confirm controls are in place to prevent unintentional movement of mobile equipment and/or loads 		<ol style="list-style-type: none"> 1. I inspect my fall protection equipment before use 2. I secure tools and work materials to prevent dropped objects 3. I tie-off 100% to approved anchor points while outside protected area 4. I have validated prompt rescue capability when wearing fall protection 5. I will follow safe work practices when climbing, descending or working from ladders 		<ol style="list-style-type: none"> 1. I verify opening/break location(s) 2. I confirm energy isolation is complete 3. I manage ignition sources and confirm gas testing is completed when required 4. I use appropriate PPE and defensive behaviors when opening process equipment 	
 Driving Follow safe driving rules ☐		 Work Authorization Work with a valid permit when required ☐		 Line of Fire Keep yourself and others out of the line of fire ☐	
<ol style="list-style-type: none"> 1. I always wear a seatbelt 2. I do not exceed the speed limit, and reduce my speed for road conditions 3. I do not use phones or operate devices while driving 4. I am fit, rested and fully alert while driving 5. I follow journey management requirements 		<ol style="list-style-type: none"> 1. I have confirmed if a permit is required 2. I am authorized to perform the work 3. I understand the permit 4. I have confirmed that hazards are controlled, and it is safe to start 5. I stop and reassess if conditions change 		<ol style="list-style-type: none"> 1. I position myself to avoid: <ul style="list-style-type: none"> • Moving objects • Vehicles • Pressure releases • Dropped objects 2. I establish and obey barriers and exclusion zones 3. I take action to secure loose objects and report potential dropped objects 	
Confirm these safeguards are in place and effective prior to starting work using the applicable SWC(s). During the task, if safeguards are no longer in place or effective, STOP Work.					

Are there any additional high potential consequence hazards present?

Electrical Energy 	Moving Objects 	Lighting & Visibility 	Simultaneous Operations (SIMOPS) or Stacked Work 
Stored Energy 	Hazardous Substances 	Noise & Vibration 	
Thermal Energy 	Radiation 		

High Potential Consequence Task Steps (Description)	Check off to indicate Hold Point	POTENTIAL HAZARDS & CONSEQUENCES Include applicable Error Prone Situations and Triggers	SAFEGUARDS (Actions & Physical Safeguards) Eliminate or Mitigate the hazards
	Hold Point ☐		
	Hold Point ☐		
	Hold Point ☐		
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Confirm these safeguards are in place and effective prior to starting work using this JSA.
During the task, if safeguards are no longer in place or effective, STOP Work.

Lessons Learned (as needed): What improvements should be made for future work? Discussion leader to provide feedback to update planning package.

LAI HAZARD ANALYSIS												
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				H	M	L			H	M	L	
							D	Use pre-job stretching and flexing exercises.				
							A/E	Proper waste management receptacles shall be utilized to control trash, debris, and scrap material.				
							A/D	Access/ egress points and walkways shall be kept clear at all times.				
							A/D /E	Extension cords, welding leads, and other cables shall be routed overhead, when possible, in a manner that does not create a slip/trip hazard.				
							A	Regular supervisor walkthroughs should identify and eliminate housekeeping hazards and ensure proper housekeeping methods are being implemented throughout the work shift.				

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				H	M	L			H	M	L
							E/W	All employees are to correct (or notify their supervisor) if they observe uneven walking/working surfaces.			
							A	Care should be exercised, when surveying overhead areas.			
							A/W/E	All holes/floor opening eliminated or protected with hard barricades			
							A/D	Complete a Last Minute Risk Assessment (LMRA) prior to beginning each task			
2	Vehicle, UTV, and equipment operation around the GOLD project  	Inattention during vehicle operation resulting in collision and injury to personnel	P ☐		X		D/E/S/W/A	Prior to starting a task, Evaluate the Lifesaving Rules and actions (LSRA) start work Checks (SWC) that may apply to that task review START/STOP work expectations and implement, Verify & Validate (V&V) the appropriate behaviors and or control Safeguards per the ExxonMobil PSMS and site HSE			X

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				H	M	L			H	M	L	
	  						A	Procedures during the pre-task brief				
							A	Ensure JSA for specific LAI tasks address proper hazard control methods				
							A	Only authorized personnel shall be allowed to operate a vehicle on site.				
							A	Ensure all employees required to drive have completed defensive driving training.				
							A	All personnel shall be made aware of the site driving rules including the speed limit (10 mph).				
							S/A	Seat belts shall be worn at all times.				
							A	No cell phone or radio use allowed while operating a vehicle.				

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				H	M	L			H	M	L
							D/S /A	An entry permit (level 1 hot work) will be completed prior to allowing equipment entry into the process units including a gas test and continuous LEL monitoring as required. UTV's and company pickup trucks are not allowed within the unit boundaries.			
3	Vehicle and equipment operation within and around the GOLD project	Vehicle becomes an ignition source within or around the project area due to an unknown product release	P/F ☐		X		D/S /A	An entry permit (level 1 hot work) will be completed prior to allowing equipment entry into the process units including a gas test and continuous LEL monitoring as required. UTV's and company pickup trucks are not allowed within the unit boundaries.			X
4	Vehicle and equipment operation within and around the GOLD project	Inattention during vehicle operation resulting in collision and damage to facilities and equipment	F/E ☐		X		S/A A/W	Same as above A spotter shall be used to assist during vehicle movement in congested areas and while backing.			X

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				H	M	L			H	M	L
							S	Critical equipment should be protected from vehicle traffic.			
5	Pedestrian Traffic 	Pedestrians being struck by motor vehicle or mobile equipment	P ☐		X		A D A A/W	Controlled speed limit of 10 MPH within all project areas Designated crosswalk/ crossing areas to be evaluated on a regular basis. Limit vehicle and mobile equipment access within pedestrian travel paths A spotter shall be used to assist during vehicle movement in congested areas and while backing.			X

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				H	M	L			H	M	L
6	Mobile Equipment Operations within and around the GOLD project   	Personnel struck by mobile equipment.	P ☐		X		A S/W W A/W A/W A	Ensure JSA for specific LAI tasks address proper hazard control methods Area shall be barricaded whenever possible to restrict access to personnel. Personnel shall wear high visibility vest or reflective arm bands around mobile equipment and at night. Designated Flaggers/Spotters shall wear high visibility vest day and night. Utilize spotter when moving, mobilizing, or positioning mobile equipment into place. Complete a Last Minute Risk Assessment (LMRA) prior to beginning each task			X

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				H	M	L			H	M	L	
7	Operation of tools, heavy equipment, and Mobil equipment, including crane operations and critical lifts within and around the GOLD project   	Working in close proximity to large mobile equipment. Large equipment working in close proximity to live process systems. Working in close proximity to cranes making lifts overhead. Crush potential from counterweights and fixed objects i.e. permanent structures, near-by equipment, etc.	P/F ☐	X			D/E /S/ W/A A A/W W/A	Prior to starting a task, Evaluate the Lifesaving Rules and actions (LSRA) start work Checks (SWC) that may apply to that task review START/STOP work expectations and implement, Verify & Validate (V&V) the appropriate behaviors and or control Safeguards per the ExxonMobil PSMS and site HSE Procedures during the pre-task brief Ensure JSA for specific LAI tasks address proper hazard control methods Barricade or cone working area of heavy equipment. Have spotter located to direct foot or vehicle traffic around equipment.		X		

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				H	M	L			H	M	L	
							A	When working in close proximity to live systems, use a spotter when maneuvering equipment.				
							W/A /S	Barricade off area where lifts will be swung over.				
							W/A	Before load is lifted, have a spotter clear the area where the lift is being swung utilize whistles and horns.				
							A/D /W/ S	Barricade area around crane and counterweight swing radius do not get between crane and fixed objects				
8	Escort / Spot truck for unloading -Truck may need to be escorted to unloading point.	Insufficient space to safely unload truck. Unlevel or unstable surfaces for unloading. Unloading area not secure.	P/F ☐				A/D	Have route planned to get trucks in and out safely				
							A	Have all permits and pre-tasks ready and reviewed				
							A	Have flagger in place				

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				H	M	L			H	M	L
		Congested areas Blind spots					A	Know evacuation routes and muster points			
							D	Ensure adequate space is available for loading/unloading, obstacle may need to be moved or truck repositioned to safely unload.			
							D	Load/ unload machinery/material in open area away from power lines			
							A/D	Ensure loading/unloading area is adequately level and stable enough for equipment weight involved.			
							A/D	Plan in place to keep non-essential individuals out of loading/ unloading zone.			
							A/D	Flaggers will assist and maintain visual contact with operator/driver at all times, never walk behind load being backed in.			

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				H	M	L			H	M	L	
							A/D	Do not park equipment close to other equipment or against immovable objects (Building, process piping, utility stations, poles, etc.)				
							A/D	Do not park equipment in front of emergency equipment.				
9	Develop unloading strategy -Joint jobsite visit with unloading crew and driver.	Truck remains running unintentionally. Driver left unattended. Incorrect equipment chosen to unload truck. Material left on trailer could shift or fall creating crush hazard.	P/F ☐				A	If truck is not going to remain running so driver can pull away from under load, truck needs to be shut off, brake set and wheels chocked.				
							A	Driver needs to be accounted for during entire unloading operation.				
							A	If not in cab driver needs to remain with spotter / safety watch responsible for ensuring the area is clear.				
							A	Crew needs to decide if forklift, crane or both will be needed to safely unload truck.				

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				H	M	L			H	M	L
							A/D	For loads requiring multiple trips to offload, remaining material shall be secured from moving until ready to offload.			
10	Unbind load- Determine who will unbind the load.	Struck by binders under pressure Pinch Points from binders, chains, winch bars Load shifts, rolls or moves during unbinding process. Load is unstrapped in an unplanned manner causing load to move. Line of fire – crush points.	P ☐	X			A/D A A/S A/D /S A	Do not place any body parts in the line of fire when disconnecting binders Identify all pinch pints prior to putting your hands on anything. Wear proper PPE (gloves, hard hat, safety glasses, etc.) If uncertain, load must be additionally secured via wood chocks, rigging to crane, pipe stakes etc. In some situations, the sequence that unbinding occurs may be important and may require a strategy for removing straps.		X	

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				H	M	L			H	M	L
							A	Identify and avoid any crush points. Ensure all crew members aware of their respective responsibilities including driver.			
11	Loading/ Unloading equipment and material	Equipment/ material rolling off trailer Line of fire – Pinch and crush points. Falling off trailer/truck	P/F ☐		X		A	Allow vendor to load / unload their own equipment			X
							A/D	Keep personnel away form trailer being loaded/unloaded			
							A/D	Have flagger/spotter assist with getting equipment on/off trailer / truck safely			
							A/D /S	Stanchions should be used to keep material from rolling off trailer			
							A/S	Wear gloves when handling material.			
							A/D /S	Use 4x4's or landscape timbers to set material on			

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				H	M	L			H	M	L
							A	Watch hand placement when placing dunnage.			
							A	Keep fingers and hands out of in-between situations. Only use a secured ladder to access trailer deck			
							A	Stay away from edge of trailer when walking on trailer			
							A	Be aware of holes/broken boards on trailer			
							A	Use 3 points of contact when climbing.			
							A	Be aware of oil or slippery spots on trailer – Rotten boards, dunnage, etc.			
							A/D	Wait until material/equipment is loaded/ landed before accessing the trailer.			

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							A/D	Do not lift/move equipment/material after rigging/securing it while a person is still on the trailer/truck			
12	Load/Unload and move material / equipment via forklift truck.	<p>Forklift is not capable of handling weight / size.</p> <p>Load slides or rolls off forklift while attempting to pick up or move load causing loss of load or crush point for crew.</p> <p>Load is pushed off opposite side of trailer.</p> <p>Forklift strikes objects or people while backing away with load.</p>	P/F ☐		X		<p>A</p> <p>A</p> <p>A/D</p>	<p>Operators must be qualified to run equipment and possess a current operator's card issued by the appropriate Worley designees.</p> <p>Ensure weight is known and forklift used is of the correct size and configuration for task.</p> <p>Ensure forklift addresses load squarely (at 90°). Picking up loads on an angle may cause loads to shift as they are moved. Load must be centered on forks and forks must be adjusted properly for load configuration.</p>			X

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							A/D	If load must be shifted to mast, ensure area is clear of crewmen and keep forks as low as possible during process.			
							A/D /S	Safeguards must be in place to prevent load from being pushed off trailer. (chocks, pipe stands, second piece of equipment, etc.)			
							A	Spotter will always be in constant communication with operator to ensure safe delivery of material to staging location.			
13	Load/Unload and move material / equipment via crane.	Crane failure due to inadequate rating. Crane fails due to unstable ground / surface. Unstable load creating crush hazard while rigging on trailer deck.	P/F ☐		X		A	Operators must be qualified to run equipment and possess a current operator's card issued by the appropriate Worley designees.			X
							A	Load weight is known and proper size crane utilized for task.			

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		Fall from heights while on trailer. Load is unstable when moving from trailer to grade. Load is lifted over persons heads. Driver is placed in the line of fire during unloading. Load is lifted unexpectedly creating hazards.					A/D A/D A/D /S A/S A/W /S	Ensure surface for crane location is adequate and matted if required before moving crane into position. Ensure load is secure before accessing trailer to rig material. Use trailer access ladder or portable ladder to gain access to trailer deck. If fall potential is > 6' the fall hazard must be mitigated. Ensure tag lines are attached as appropriate when rigging is performed. Barricade the affected area as appropriate to ensure unauthorized individuals are protected from overhead lifts.			

 Target: **P**=Personnel, **F**=Facilities and equipment, **E**=Environment

 Control Type: **D**=Design hazard out or minimize, **E**=Engineering control, **S**=Safety device, **W**=Warning device, **A**=Administrative control

LAI HAZARD ANALYSIS

Project Number:		Project Task: Field Towing, Loading and Unloading of Materials and Equipment				Location:					
Prepared By:				Date:		Reviewed By:				Date:	
Ref. Number	High Potential Consequence Task Steps	POTENTIAL HAZARDS & CONSEQUENCES Include applicable Error Prone Situations and Triggers	Target Check off to indicate Hold Point	Preliminary Risk Assessment			Control Type	SAFEGUARDS (Actions & Physical Safeguards) Eliminate or Mitigate the hazards	Final Risk Assessment		
				H	M	L			H	M	L
							A	Drivers are to be in the cab or escorted by spotter / safety watch at all times during unloading operations.			
							A	When using crane to unload materials, communication is key. Before unbinding or lifting spotters must be in place and clear communications established with all crew members including driver.			
14	Installing straps and or binders	Struck by equipment, binders, chains, straps	P ☐		X		A	Stay out of swing radius of machinery			X
							A	Allow vendor to secure load.			
							A	When throwing straps over the load to secure, be sure all personnel are clear of the area.			

 Target: **P**=Personnel, **F**=Facilities and equipment, **E**=Environment

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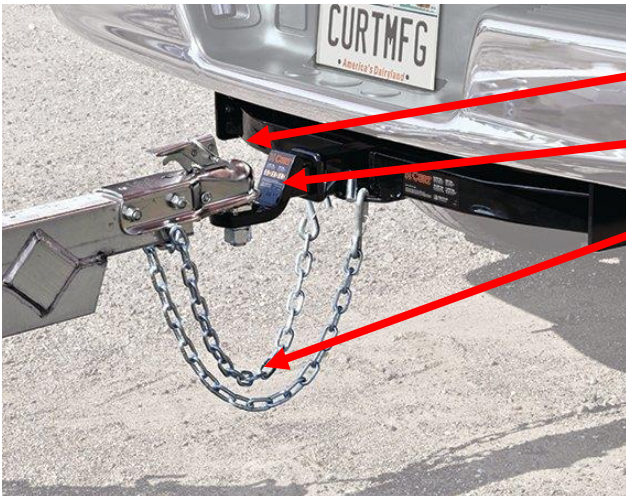
LAI HAZARD ANALYSIS											
Project Number:		Project Task: Field Towing, Loading and Unloading of Materials and Equipment				Location:					
Prepared By:			Date:		Reviewed By:				Date:		
Ref. Number	High Potential Consequence Task Steps	POTENTIAL HAZARDS & CONSEQUENCES Include applicable Error Prone Situations and Triggers	Target Check off to indicate Hold Point ☐	Preliminary Risk Assessment			Control Type	SAFEGUARDS (Actions & Physical Safeguards) Eliminate or Mitigate the hazards	Final Risk Assessment		
				H	M	L			H	M	L
15	Towing trailers or equipment around the GOLD project via truck	Loss of trailer/ equipment due to improper preparation, inadequate towing vehicle, improperly attached ball/hitch, clearance or load/towing capacity	P/F/E ☐		X		A	Only trained and authorized personnel will tow trailers/equipment around the GOLD project			X
							A/D	Prior to towing, a Worley GOLD project Trailer and equipment Towing Pre-Trip Safety Inspection Checklist must be completed by the authorized person.			
							A/D	Utilize spotters/ flaggers as necessary /while navigating congested areas.			

Target: **P**=Personnel, **F**=Facilities and equipment, **E**=Environment

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Trailer and equipment Towing Pre-Trip Safety Inspection Checklist

Review the following checklist and indicate whether each item is satisfactory (SAT.), unsatisfactory (UNSAT.) while including applicable notes. All unsatisfactory issues must be properly addressed before the trailer /equipment can be towed.	SAT.	UNSAT.	NOTES LEGEND
1. Is the tow vehicle and tires rated to safely tow the trailer / equipment load.			
2. Tow vehicle is level when attached to the loaded trailer.			
3. The receiver is properly mounted to the tow vehicle.			
4. The hitch ball and coupler are the same size. When attached, the ball is firmly seated in the coupler, and the latching mechanism is locked. Verify sizes and write in the sizes in the notes section.			Three ball sizes are used for trailers (1 7/8", 2" & 2 5/16"). Ball size: _____ Trailer hitch size: _____
5. The safety chains are securely attached to both the tow vehicle and trailer, crossing under the trailer tongue in an "X" pattern.			
6. The safety chains connect the trailer and tow vehicle, while providing enough slack for turning.			
7. Trailer jack stand is in the stowed position prior to traveling.			



Ensure latch is properly latched and safety pin is in place.

Ensure hitch is properly seated on the ball.

Ensure safety chains are connected in an "X" pattern under the trailer tongue.

Check list completed by:

Print

Sign

Date



Truck/Trailer Loading and Unloading Checklist

Date: _____ Company Picking Up or Delivering Equip/Mat'l: _____

Supvr./Lead Person: _____ Truck Driver Emergency Phone Number: _____

Location: _____

Type of Trailer: Box: ☐ Flatbed: ☐ Low Boy: ☐ No Trailer, Truck Only: ☐ Trailer #: _____

Type Mobile Equipment Needed to Load/Unload Truck:

Fork Truck: ☐ Crane: ☐ Other (Identify): _____ Lifting Permit/Critical Lift Required? YES ☐ NO ☐

- Only one piece of pipe can be picked at a time because of the potential for pinch points and damage to the material.
- If the load arrives at the site and cannot be unloaded safely, **notify management immediately**.

Hazards

YES		NO	YES		NO	YES		NO
☐	☐	Wet Truck Beds	☐	☐	Load Shifted during transit	☐	☐	Overhead Electrical Lines
☐	☐	Stored Energy – Chain binders	☐	☐	Weather Conditions	☐	☐	Dirt or Debris on Truck Bed
☐	☐	Stored Energy – Ratchet straps	☐	☐	Ground Cond./Loading Area	☐	☐	Broken pallets
☐	☐	Sharp edges or splinters	☐	☐	Other work nearby	☐	☐	Other (Identify):

FLRA (Please Initial below once complete)

NOTE: All Personnel involved in the loading/unloading process must have signed a FLRA that is appropriate for the job task. If you answer "NO" to the question below, then it is considered a job scope change and a new FLRA must be completed.

☐ ☐ Does the current FLRA cover the hazards associated with the loading/unloading of this truck/trailer?

Taglines (Please Initial below once complete)

_____ I have verified that the tag lines are attached to the load and not to the chokers (except for shakeout hooks).
_____ I have verified that the tag lines are longer than 12', have no knots and are 5/8" diameter or larger.
_____ I have attached a tag line to each end of the pipe or steel (if it is 20' in length or greater).

If Using a Crane (Please Initial below once complete)

_____ I have verified the weight of the load, the approximate weight is _____.
_____ I have verified that the crane is set up according to the manufacturer's recommendations.
_____ I have verified that the crane outriggers are fully extended and down on mats.
_____ I have verified that the crane tires have a minimum of 1" ground clearance when leveled on the outriggers.
_____ A flag person with a hi-visibility orange vest and flag will walk in front of the crane while it is relocating.
_____ Cranes are not allowed to pick and carry their loads.
_____ A forklift can be used to assist a crane while unloading.

Loading/Unloading (Please Initial below once complete)

_____ The vehicle being loaded/unloaded is turned off and the wheels are chocked.
_____ I have verified that a step ladder is being used for access to and egress from the trailer and it is secured before use.
_____ I have instructed the loading/unloading employees to stay off the trailer (unless deemed absolutely necessary).
_____ I have identified any damaged trailer boards and/or decking components and guarded them appropriately.
_____ If the trailer must be accessed, I have identified walking paths free of obstructions, tripping hazards, etc. Notify your supervisor/lead person to determine acceptable methods if a safe means of navigating the trailer cannot be achieved.
_____ If the trailer is equipped for pipe stakes, I have inspected the rails for cracks and have installed stakes before any bindings are loosened or any loading/unloading begins.
_____ Once the material is rigged, all employees will be off and clear of the trailer while it is lifted.
_____ A trailer will not be moved unless the load is secured in a safe manner.
_____ No load will be dropped on the trailer or the ground.
_____ Notify your supervisor immediately of any damage that occurs to material or equipment while loading or unloading.

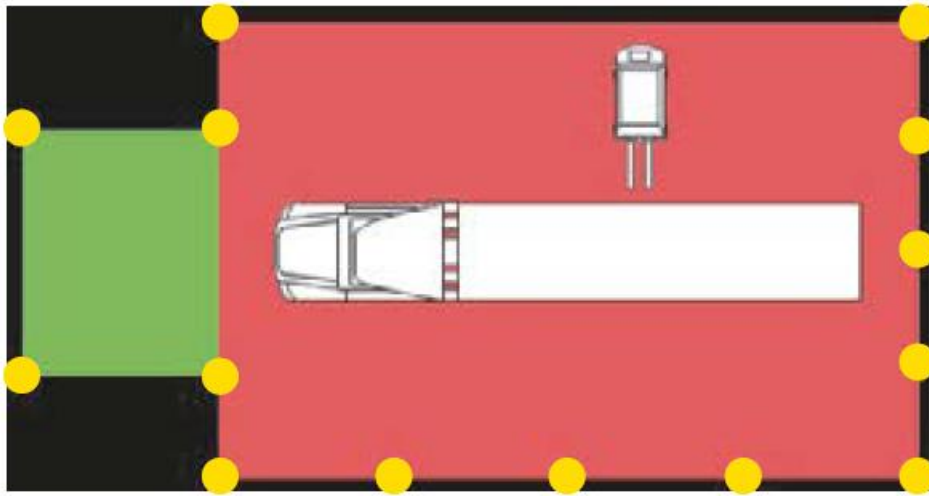
Instructing the Driver (Please Initial below once complete)

_____ I have instructed the driver to exit the cab and stand in the designated safe zone during the loading/unloading. I
_____ have instructed the driver that they will not participate in the loading/unloading activities.

No material will be loaded or unloaded until the supervisor/lead person has reviewed this checklist with the crew and signed it.

Supervisor/Lead Person Signature

Operator Signature



- Barrier, bollards, witches hats, painted lines
- Safety zone
- Exclusion zone - no pedestrians while mobile plant operating