



L48 1Q 2017 HSE Operational Performance Review

April 20th, 2017

Agenda



- Q1 2017 YTD HSE Performance Summary
- Continuation of our Safety + Journey
- Focus on Dropped Objects
- President Trump's Executive Order and What it May Mean for L48
- January OPR Action Feedback

HSE Performance – Q1



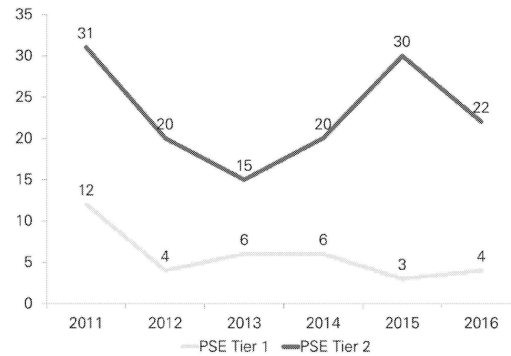
Note: Data through March 31, 2017

	2016 Full Year	2017 YTD Actual
Major Incidents and HiPos		
HiPos - All severity	6	1
Personal Safety		
DAFWC	1 (3 Cont.)	0 (1 cont.)
RI	4 (14 Cont.)	3 (1 Cont.)
RIF	0.62	0.47
Manhours (million)	5.8	1.7
Process Safety		
PSE Tier 1	4	1
PSE Tier 2 ¹	22	9
LOPC (A-G) ²	125	33
Fire / Explosion	11	3
Well Control	5	2
Leading Indicators		
Dropped Objects	18	7

¹ L48 PSE Tier 2 under review

² 11 of the 33 LOPC (A-G) are hung dump valves

- **HiPo** – light fixture hit contractor on hard hat with no damage
- **PSE Tier 1 event** -- broken nipple on dehydration pump resulting in release of natural gas; ESD did not function as designed; focus to be given to SCE definition and SCE PM / CM requirements
- **DAFWC** - contractor pinched finger between crowbar and truck trailer
- **Fire / Explosion** – flowback related tank fire (practices revised and controls implemented)
- **Focus on Dropped Object** – 4-hour safety stand down held with 25 leaders from Dev and Ops; commitment made to complete verification and develop improvement action plan
- **Environmental** – Executive Orders signed by President Trump not expected to have material impact on L48 in the short-term; will continue to monitor for development



BP Confidential

3



L48 Safety Verifications

61% increase in Safety Verifications building deep insight into L48 HSE Performance

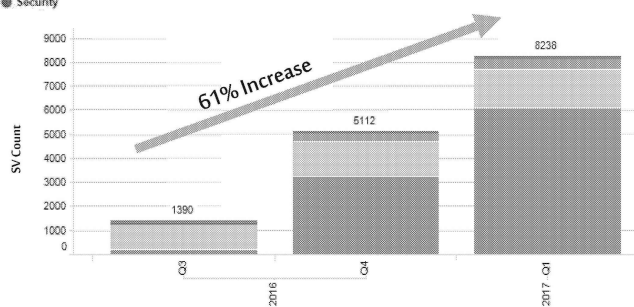
- Verifications to address dropped objects increased 145% from February to March
- Active leadership participation setting clear expectations in the field (10% of all verifications)
- Increasing L48 participation for the quarter from all teams; Dev increased 278%; Ops increased 50%

Next Steps:

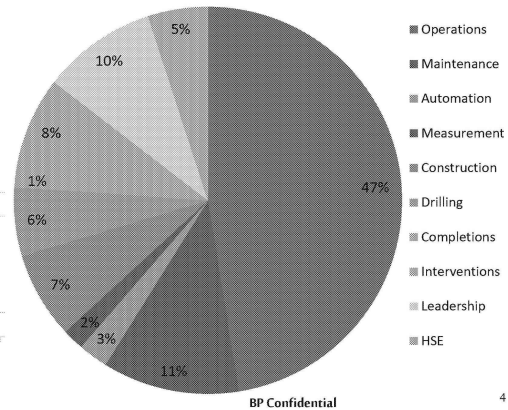
- Focus on data analytics to proactively identify and eliminate defects



L48 Safety Verifications



Entries by Job Group



BP Confidential

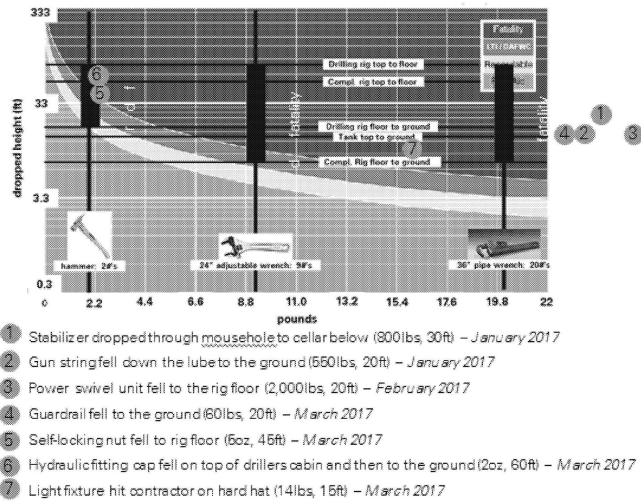
4

Dropped Objects Focus

Executive Sponsor – Doug Johnson



- How can we improve our safety culture?
- Agreed Actions:
 - BUs to conduct targeted verifications of lifting activities on all drilling, completions, interventions and facilities/construction work by **April 15**
 - BU Leaders to visit rigs and operations sites to set expectations, coach front line staff, build relationships and strengthen and reinforce safety culture by **May 30**
 - Bring dropped object bowtie to life and build sustainable action plan by **May 30**



BP Confidential

5



President Trump's Executive Order (EO)

- BLM Hydraulic Fracturing Rule (regulating fracking on federal and tribal land)
 - Subject to existing judicial stay since 2015
 - BLM preparing a notice of proposed rulemaking to rescind this rule

- BLM Venting and Flaring Rule (control methane emissions from all oil and gas sources on federal and tribal land) – *impacts existing sources*
 - Finalized rule on November 18, 2016
 - L48 put in place controls and has been in compliance of Phase 1 rules since January 2017
 - L48 forecasts initial US\$3 million investment and a subsequent cost of \$2 million in annual operating cost which will have to be executed if Phase 2 of the rule goes into effect January 17, 2018

- EPA NSPS Quad Oa (control methane emissions from new and modified oil and gas sources)
 - Finalized rule on June 3, 2016
 - L48 met compliance deadline for pumps and oil well flow back since November 30, 2016
 - Next L48 compliance deadlines are:
 - 1st LDAR inspection by June 3, 2017
 - Engineering certification of tank controls by October 31, 2017

Actions from January OPR



- Send Methane Intensity Slides – completed
- Review of OMS
 - Internal review of L48 OMS indicates Level 3+ conformance in **58 of 62** Group Essentials business committed to (out of 200 BP GE)
 - 24 Level 4
 - 4 Level 5
 - Annual OMS performance improvement cycle identified opportunities in
 - MoC and Community stakeholder relationships
 - Inclusion of back to basics in OMS
 - Recent design effectiveness of the L48's operational risk management system audit identified 2 findings at assessment level 2
 - Sustainability and complexity identified with L48 OMS – *Segment Level*
 - Inadequate documentation of L48 Risk Management Policy – *Business Level*
- Risk review of Florida Plant and L48 Well Control – *to be completed and presented at Q2 SO&R*



Back-Up

L48 OMS – PIC Review



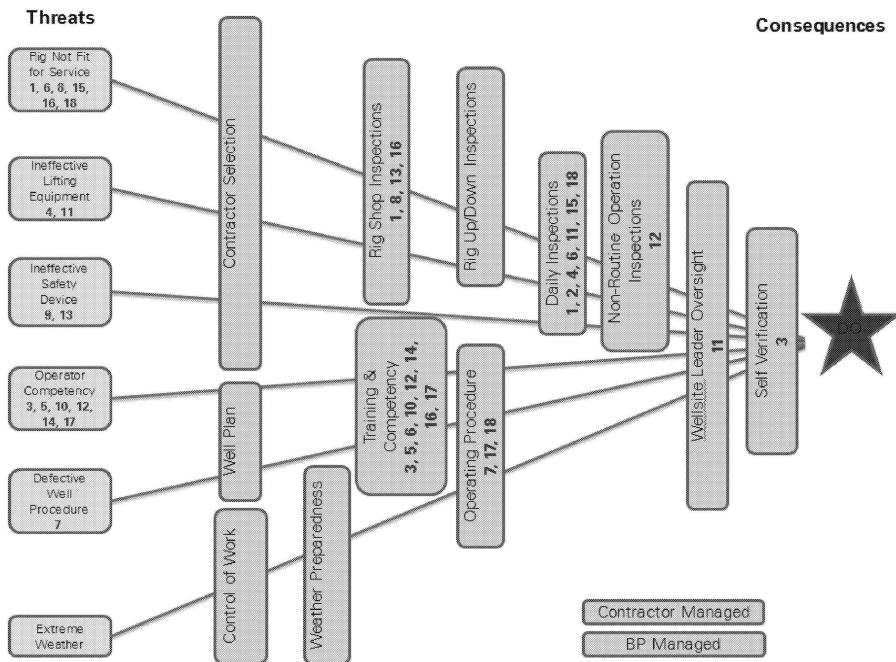
- Completed annual OMS gap assessment against 62 BP Group Essentials that were committed to Level 3 conformance by end 2017
 - 58 of 62 group essentials were determined to be Level 3+
- Areas requiring focus includes:
 - Management of Change
 - Competency
 - Accountabilities
 - Community and stakeholder relationships
- Programs recommended to be integrated into OMS includes:
 - **Back to Basics:** common set of safety principles that demand personal responsibility and protect the welfare of those working for L48
 - **Safety+ App:** behavior-based safety program designed to improve performance through visibility of leading indicators

Incident #	Operating Area	Work Type	Dropped Object Incident Description
1	Anadarko	Development	Snub pole failed causing the trough and drill pipe to drop to the catwalk.
2	Arkoma	Development	1-2 oz. piece of aluminum fell by the driller on the rig floor
3	East Texas	Development	While having difficulty making a joint, operator backed off so inspect the connection and unintentionally unscrewed the wrong joint of pipe
4	Durango	Development	¾" top drive pull down cable parted, falling to the ground
5	Wamsutter	Development	Full Open Safety Valve and assembly weighing 470lbs fell 30' to the ground
6	Arkoma	Interventions	Draw work brakes failed and the elevators hit the slips
7	Farmington	Interventions	Dropped rod as a result of rods not being properly torqued.
8	Wamsutter	Development	While attempting a blind lift with a crane, sheave broke, fragments fell 120'
9	Durango	Interventions	Dropped rod as result of rod shoulder being worn & dropping through fingers on rod basket
10	Farmington	Interventions	Rod fell from rod basket when locking ring was not slid into place
11	Arkoma	Interventions	Pup joint parted in the middle, traveled out of the elevators and landed on rig floor
12	East Texas	Development	Hydraulic winch parted after hanging on a steel plate, and fell from the winch
13	Durango	Interventions	Non-engineered trap plate broke & fell to ground after jarring activity.
14	Arkoma	Interventions	Excess cable from the rod transfer line came into contact with the drill line and sheave traveling upwards. The rod transfer line parted, falling 78' to the rig floor
15	Wamsutter	Interventions	Rod finger sleeve fell off rig monkey board falling 13' to the ground.
16	Arkoma	Development	Lowering a stand into the mouse hole, the storm gate dropped 90' to the racking area
17	East Texas	Development	Pick up sup connection backed out below the elevators and toppled to the rig floor
18	East Texas	Development	Stabilizer with it's blades resting on the mousehole, fell 30' to the cellar below

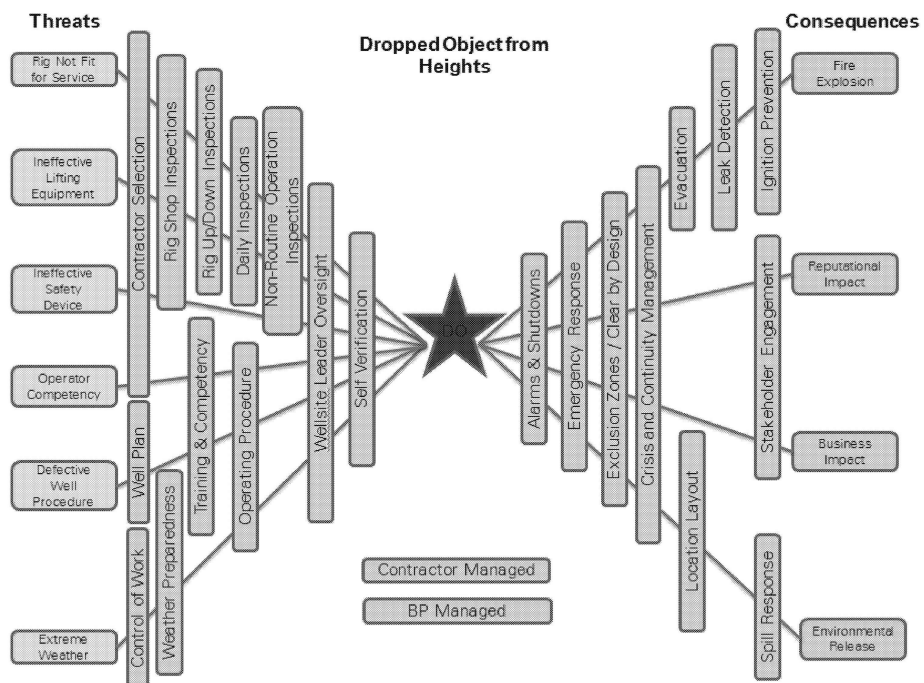
BP Confidential

10

2016 Dropped Objects Incident Mapping



Dropped Objects Focus





What Happened:

On March 28, 2017 a nitrogen operator was adjusting the mast of a 3rd party light plant, to position the light beam towards the wellhead. While adjusting, one of the light fixtures (14lbs) fell approximately 15'. The fixture struck the operator's hard hat, bringing the individual to their knees. Operator notified BP WSL and notifications were made to appropriate personnel. Contractor's case management recommended over the counter anti-inflammatory.

What We Learned?

- 2 of the 5 light plants on location had Style 1 type of connection (without a safety cotter pin). The other 3 light plants had Style 2 type of connection (with safety cotter pin).
- Over time, the Style 1 connection loosened. When the operator attempted to move the mast, the Style 1 nut came off from the bolt, causing the fixture to fall.
- The light plant manufacture commonly supplies both styles of connections - with and without safety cotter pin.

What can you do to prevent this in your operation?

- Verify all light plants, regardless of manufacturer, have a method for preventing the light fixture's nut from backing-out. If a cotter pin (or similar) is not immediately available, utilize a tether (secondary) method to prevent the light fixture from falling.
- Verify that connections on overhead objects/equipment are sufficient and (or) secured to prevent the potential of a dropped object.
- Rental equipment – inspect once it's been delivered/assembled on location, verify proper condition for use and maintenance schedule (Note: moving forward, we asked this rental company to only supply us with "Style 2-locking pin" light plants.)



Incident Date: 03/28/2017 BU: North BU

Contact Person: Bob Locke: Robert.Locke@bp.com

President Trump's Executive Order (EO)



- Executive Order Promoting Energy Independence and Economic Growth signed by President Trump on 5/28/17
- Non-regulatory actions put in place by President Obama that impact L48 have been rescinded by the EO
 - White House Council on Environmental Quality Guidance on incorporating climate change analysis into NEPA reviews.
 - Requirements to apply a “social cost” of carbon and methane in a regulatory impact analysis context.
 - Presidential Memorandum “Mitigating Impacts on Natural Resources from Development, etc.”
- The EO commence the process of rolling-back a number of final regulations that impact L48 includes:
 - BLM Hydraulic Fracturing Rule (regulating fracking on federal and tribal land)
 - BLM Venting and Flaring Rule (control of methane emissions from all oil and gas sources on federal and tribal land)
 - EPA New Source Performance Standard (NSPS) Quad Oa (control of methane emissions from new and modified oil and gas sources)

L48 Actions Related to the EO



NSPS OOOOa	BLM Venting & Flaring Rule	BLM Hydraulic Fracturing Rule
Plan and Implement - Continue to plan for compliance with rule – additional compliance deadlines in 2017.	Plan and Implement - Continue to plan for compliance with rule – additional compliance deadline 1/17/2018.with 6/1/17 critical decision point for implementation	Judicial Stay - Subject to existing judicial stay since 2015.
Redacted - First Amendment	Redacted - First Amendment	Redacted - First Amendment

New Source Performance Standard (NSPS) OOOOa (Finalized 6/3/16)

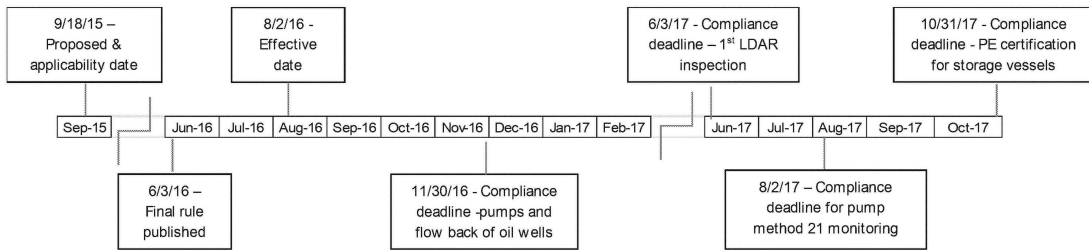


- Expanded NSPS OOOO to directly regulate methane as a pollutant versus volatile organic compounds (VOCs) only.
 - The Clean Air Act requires that EPA do an existing source performance standard for methane if sources are regulated under the NSPS for methane.
- Expanded the applicable the new, modified, and reconstructed sources beyond OOOO (does not apply to existing sources)
 - OOOO covered flow back from hydraulically fractured gas wells, compressors, storage vessels, and high bleed pneumatic controllers
 - OOOOa added flow back from hydraulically fractured oil wells, pneumatic diaphragm pumps, and leak detection and repair (LDAR).
- Litigation - API has filed a petition for judicial review and reconsideration on the direct regulation of methane, several reconsideration issues (items not proposed), and other issues with the rule.

Redacted - First Amendment

- EPA Review of the Rule: EPA published in the Federal Register on 4/3/17 that it plans to review and potentially revise the rule based on the Executive Order.

NSPS OOOOa Timeline



BLM Waste Prevention, Production Subject to Royalties, and Resource Conservation Rule (Flaring and Venting) (Finalized 11/18/16)



- * Applies to new and existing federal and tribal leases, units, and communitized areas and covers:
 - Changes in royalty rates, royalty and royalty-free production, measurement and estimations of production, and unavoidable and avoidable losses
 - Oil well drilling applications and plans
 - Flaring and venting prohibitions
 - Well drilling requirements
 - Well completions requirements
 - Production testing
 - Emergencies
 - High bleed pneumatic controller replacement
 - Pneumatic diaphragm pumps controls
 - Storage vessels controls
 - Downhole maintenance and liquids unloading
 - Leak detection and repair
- Litigation - WEA, IPAA, and several states have filed petition for judicial review of the rule because it seems to go beyond BLM's authority under the Minerals Leasing Act.
- Congressional Review Act - The House of Representatives revoked the rule under the Congressional Review Act in February and the Senate may vote to revoke it in April 2017. L48 is supporting BP and API advocacy efforts with Congress.
- Deadline Extension and Rule Revision L48 is supporting API efforts to extend the compliance deadlines extended 1-2 years in case the rule is not revoked by Congress or stayed by the courts to provide time to address issues with the rule through a rule making process.

BLM Flaring and Venting Timeline

