

**BUILDING A PROACTIVE SAFETY CULTURE IN THE DREDGING INDUSTRY
THROUGH USE OF JOB SAFETY ANALYSIS AND JOB SAFETY ANALYSIS AUDITS**

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2015 WEDA & TAMU Dredging Summit & Expo



GLDD FLEET

5 MECHANICAL



DREDGE 55

19 HYDRAULIC



DREDGE TEXAS

7 HOPPER



LIBERTY ISLAND



125
Years
OF DREDGING

INDUSTRY QUERY



SAFETY MOMENT



SAFETY CULTURE

SAFETY TOOLS

SALT

JSAs & the 6Ts

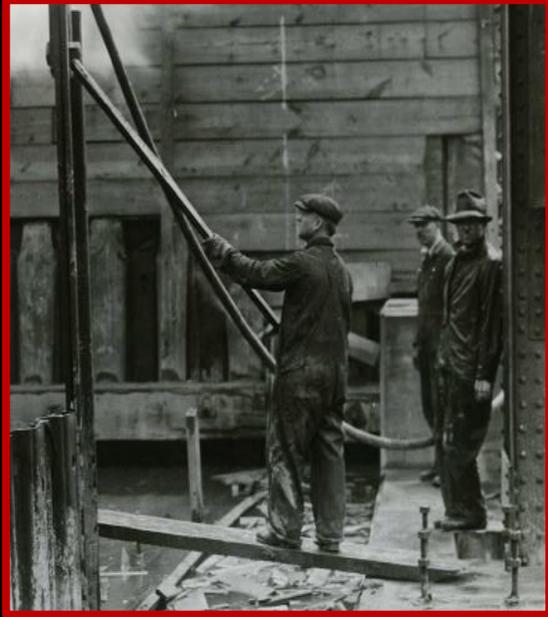
JSA AUDITS

ACCOUNTABILITY

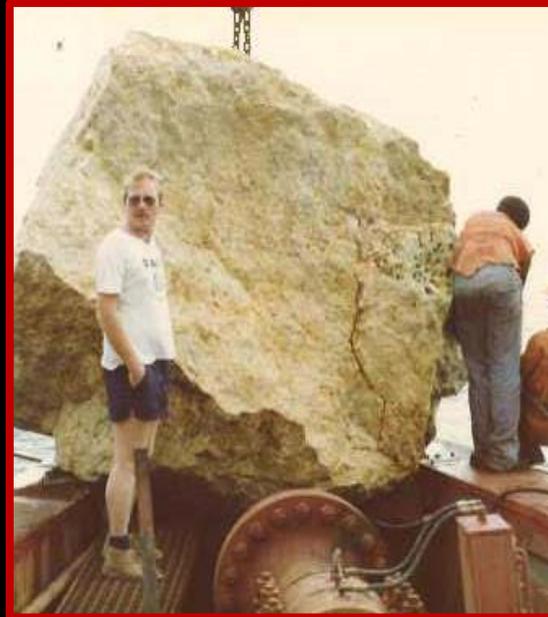
LETS TALK ABOUT SAFETY!



TRANSFORMATION



1890



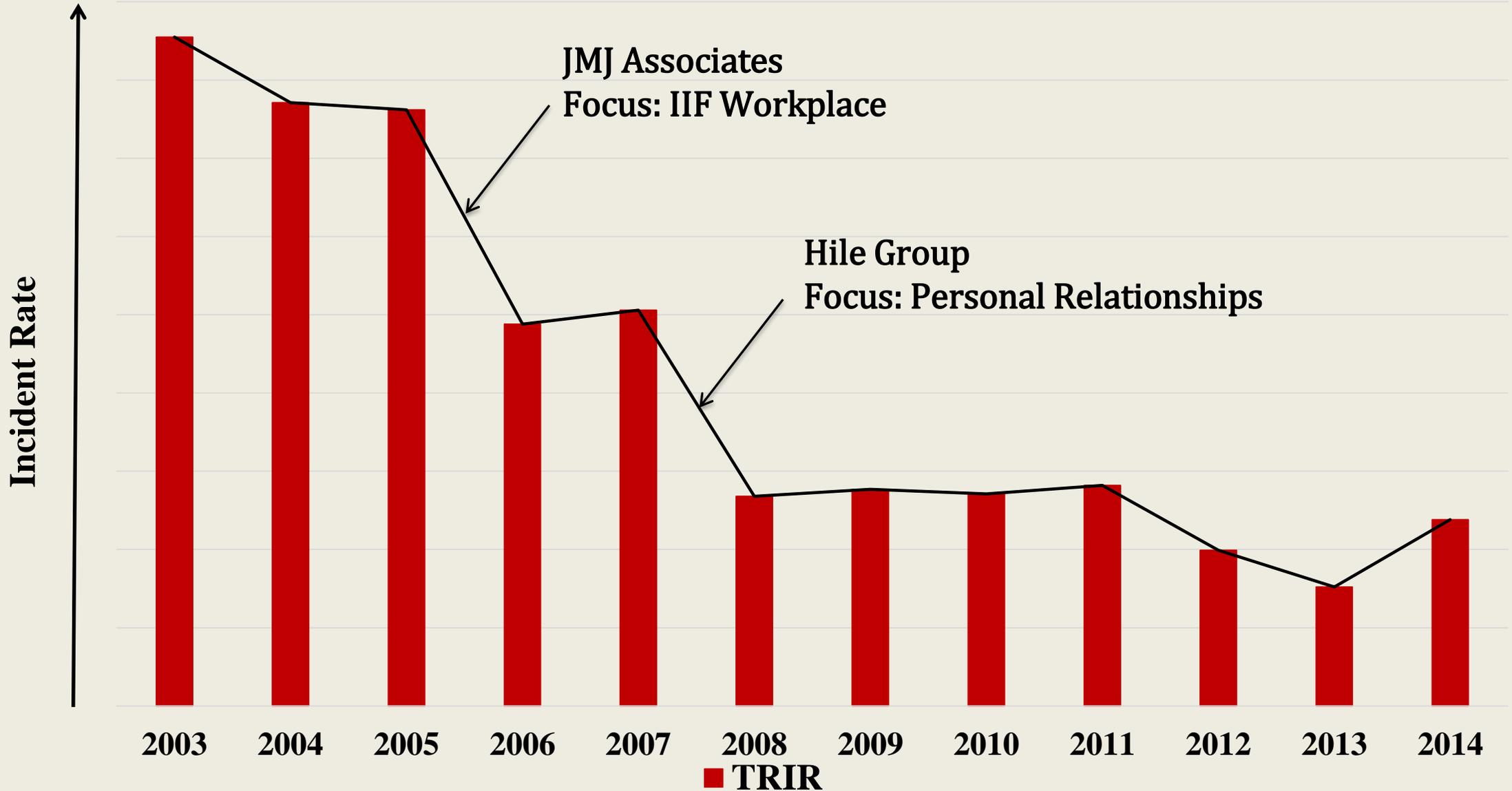
1972



2007



2015



BUILDING A PROACTIVE SAFETY CULTURE

- Good communication, goals and follow up actions
- Frontline and upper management involvement
- Effective safety tools
- Regular training initiatives
- Accountability program



MANAGEMENT INVOLVEMENT



A dramatic seascape with a dark, stormy sky and white-capped waves crashing onto a sandy beach. The sky is filled with heavy, dark clouds, and the water is turbulent. The waves are white with foam as they break on the shore. The overall mood is one of danger and urgency.

SAFETY TOOLS

Save

A

Life

Today

18. Hydrographic Surveying



SEE ALSO BATTERIES; ELEVATED AND CLIMBING EQUIPMENT; PERSONAL PROTECTIVE EQUIPMENT (PPE) AND CLOTHING

1. Remove ice and/or apply salt before working on the deck in icy conditions.
2. Before performing hydrographic surveys:
 - Review navigational charts and Notice to Mariners for area hazards.
 - Ensure at least two crew members are present.
 - Establish communication between survey vessel and any dredge when surveying in the vicinity of a dredge.
 - Communicate survey activity to vessels via radio during and after any operation.
3. Wear fall protection when working from an elevated surface of six feet or more.
4. Approach all vessels and/or docking situation at minimal speed.
5. Use *buddy system* whenever on the back deck.
6. Ensure electrical source to equipment is turned off. Follow *lockout/tagout* procedures before *repairing*, installing, or removing electrical equipment.
7. Ensure hand jewelry is removed and wear gloves before performing a bar check.
8. Conduct nighttime surveys only when *authorized* and *qualified*.
9. Carry a light source in diminished-light *work areas*.
10. When working on the roof:
 - Confirm weather conditions include good visibility and roof conditions are free from debris or ice.
 - Use *buddy system*.

Recommended Practices

Stop hydro survey if visibility is less than a half mile.

Confirm wave conditions are at four feet or less before operating a vessel 30 feet long or less.

Lower engine speed if any personnel are outside of the cabin and while turning.



JOB SAFETY ANALYSIS

A safety tool used to identify all known and potential hazards associated with each step of a task and involves a discussion among all workers involved with the task



HAZARD CONTROL & RECOGNITION: The 6Ts

Today

Task

Tools

Tidy Up

Transition

Time Out

Job



JOB SAFETY ANALYSIS

JOB TITLE:
Calibrate the Ladder

LOCATION of JOB
Dredge Texas Cutter Service
Platform/Leverroom

Date: 03/08/2014
PAGE: 1 OF 1

JSA NO.: 1
REV: 1
Written By: A. Roznowski

Tools to Be Used: Rigging Electrical Tools Torches Air Tools
 Hand tools Welding Hyd. Tools *Other

Tool safety and inspection was covered in the JSA briefing *Other tools used included a tape measure, pressure transducer and zip ties

REQUIRED AND/OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT:
 Hardhat Personal Floatation Device Safety Glasses Steel Toed Boots Gloves Type High Vis
 Hearing Protection High visibility vest Other: VHF Radio

JSA REVIEWED BY:
A. Roznowski
Supervisor's Signature

MAJOR JOB STEPS	POTENTIAL HAZARDS & CONSEQUENCES	RECOMMENDATIONS TO ELIMINATE OR REDUCE HAZARDS
Acquire Proper PPE and Tools	Improper Housekeeping	Replace tools to original proper location
Notify crew not involved in JSA of calibration efforts	Lack of communication can lead to injury	Notify Captain and other crew in working area of plans for calibration of the ladder and what to be aware of. Communication for the calibration will be performed with VHF Radio, Channel 8
Review JSA with all personnel involved and designate assignments for location of personnel (who will be in leverroom/cutter service platform)	A potentially dangerous situation may have been overlooked.	Involving more personnel in the JSA including the leverman, Captain, and an auditor(Chief) allows for other suggestions to arise which could help to eliminate potential hazards that may have been overlooked.
Transfer to and inspect path to the service platform, ladder and service platform using buddy system	Debris removed from cutter, cutter teeth and other items are often on the service platform causing a potential for slips, trips and falls. A slip or trip could cause personnel to fall into the water, onto the cutter head or on the stairs.	Have all personnel participate in inspection of the ladder and stairs. Distribute tools needed for the job evenly so everyone can maintain three points of contact on the stairs. Once on platform, assign everyone's position and re-check tripping hazards. Use buddy system to prevent falling into the water.
Attach tape measure/pressure sensor to cutter head using zip ties	Falling into the water when leaning over	Use buddy system when leaning over to attach sensors to ensure no one falls into the water or onto the cutter. Use localized controls(LOTO) for cutter rotation on cutter service platform to bring the teeth to you so leaning over is minimized.
Perform calibration to 20', 30', 40', 50' & back up to 30'	Mis-communication could lead to ladder moving before reading is taken. Unexpected movement of cutter service platform due to traffic.	Keep constant communication between leverroom and cutter service platform throughout entire task. Make sure all parties know when task is completed.
Remove tape measure/pressure sensor from cutter head using snips to remove zip ties	Falling into the water when leaning over, improper use of snips could lead to injury.	Use buddy system when leaning over to attach sensors to ensure no one falls into the water or onto the cutter. Use localized controls(LOTO) for cutter rotation on cutter service platform to bring the teeth to you so leaning over is minimized. Use snips properly to cut zip ties and remove equipment from cutter head.

ALL WORK MUST STOP IF YOU DEVIATE FROM THE JSA PLAN



Safety

Analysis

HAZARD CONTROLS

→ Engineering Controls

→ Machine guards, enclosed cab, etc.

→ Administrative Controls

→ Alarms, signs, training, etc.

→ Personal Protective Equipment

→ Hard hat, respirator, etc.

JOB SAFETY ANALYSIS AUDIT

EVALUATION TOOL

COACHING TOOL

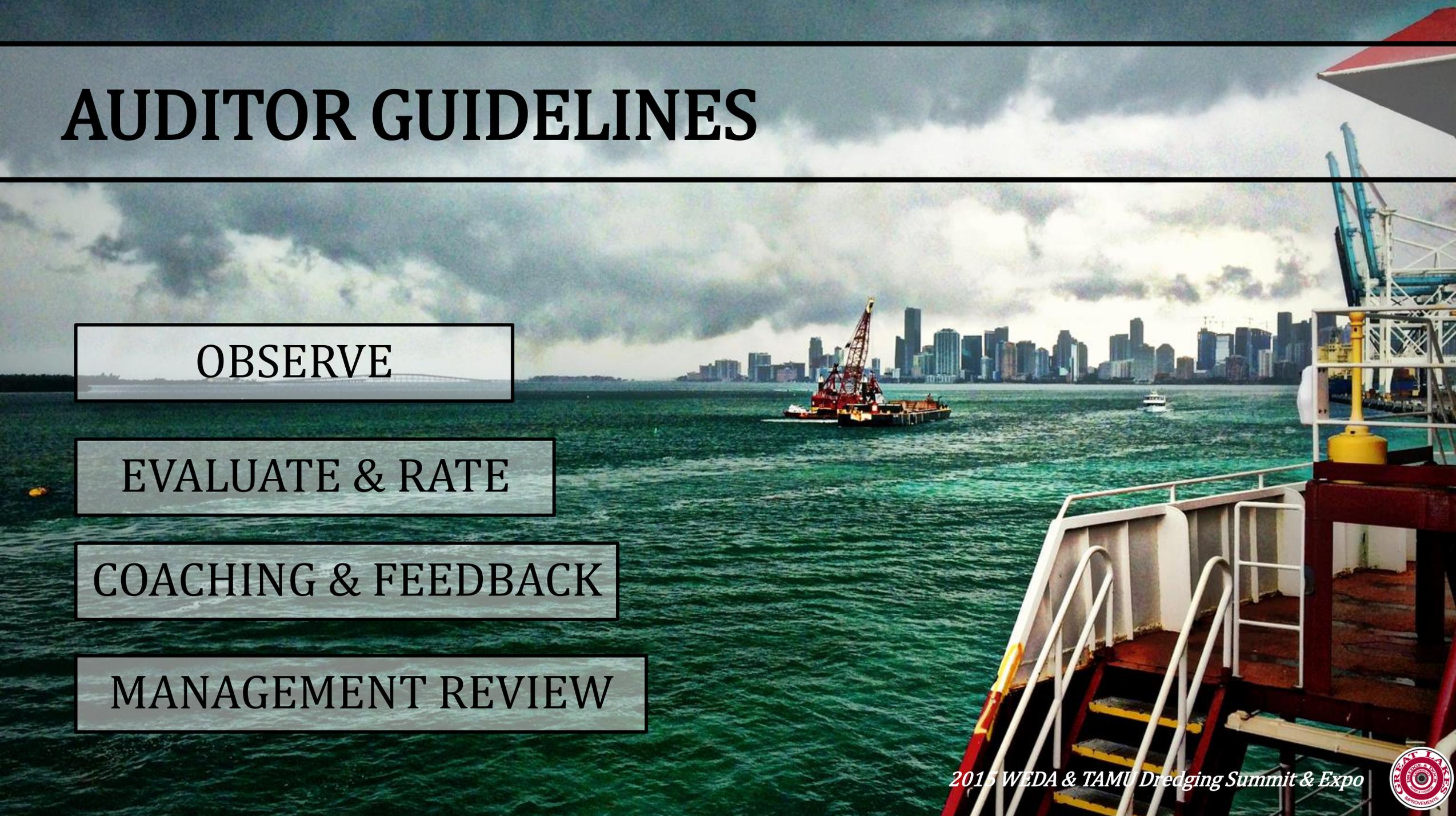
JSAs REMAIN VIABLE

QUALITATIVE FEEDBACK

VERSATILITY



AUDITOR GUIDELINES

The background image shows a harbor scene under a cloudy sky. In the distance, a city skyline with various skyscrapers is visible. A large red and white dredging vessel is positioned in the middle ground. To the right, the deck of a boat is visible, featuring a set of stairs with white railings and a yellow handrail. The water is a deep greenish-blue.

OBSERVE

EVALUATE & RATE

COACHING & FEEDBACK

MANAGEMENT REVIEW

Job

Safety

Analysis

Audit



Job Safety Analysis (JSA) Audit Card

Date: 03/08/14

Auditor: B. Markey

Project Number: 72282

Task Name / Number: Calibrate Ladder depth

Routine

Non-Routine

Vessel /

Fill Site: Texas

Foreman

Captain / Chief B. Markey

• Task Supervisor:

A. Roznowski
(Name)

Asst. Project Engineer
(Position)

• Witness the JSA

Yes No

• Witness the Task

Yes No



Job

Safety

Analysis

Audit

<u>AUDIT ITEMS:</u>		The 6 T's		YES	NO
1.	TODAY				
	o Met at the task area			<input checked="" type="checkbox"/>	<input type="checkbox"/>
	o Inspected access ways to and from			<input checked="" type="checkbox"/>	<input type="checkbox"/>
	o Considered the environment for today			<input checked="" type="checkbox"/>	<input type="checkbox"/>
2.	TASK	Very Good	Satisfactory	Needs Improvement	Unacceptable
	o Reviewed the task in steps.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	o Ensured each crewmember knew his role	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	o Recognized, analyzed and mitigated the hazards	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	o Communication/Conversation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	TOOLS			YES	NO
	o Identified, gathered and inspected the tools			<input checked="" type="checkbox"/>	<input type="checkbox"/>
	o Identified required PPE			<input checked="" type="checkbox"/>	<input type="checkbox"/>
4.	TIDY UP				
	o Cleaned-up after the task - Discussed during JSA			<input checked="" type="checkbox"/>	<input type="checkbox"/>
	o Stowed all tools and equipment - Discussed during JSA			<input checked="" type="checkbox"/>	<input type="checkbox"/>
5.	TIME OUT			YES	NO
	o Made sure everyone agrees with the plan			<input checked="" type="checkbox"/>	<input type="checkbox"/>
	o Reminded everyone to call "Time Out"			<input checked="" type="checkbox"/>	<input type="checkbox"/>
	o Was "Time Out" called?			<input checked="" type="checkbox"/>	<input type="checkbox"/>
	o IF so was there a JSA revision discussion			<input checked="" type="checkbox"/>	<input type="checkbox"/>
6.	TRANSITION				
	o Identified the end of this task			<input checked="" type="checkbox"/>	<input type="checkbox"/>
	o Transitioned to the next task & JSA, if applicable			<input checked="" type="checkbox"/>	<input type="checkbox"/>



J

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Did you provide the following? *(check one)*

7. Coaching to the Task Supervisor (suggested issues after JSA) Yes No

- Strengths and weaknesses of JSA

The individual giving the JSA brief had never conducted one prior to this. Some steps were unclear during the initial brief.

- Missing steps and/or details/hazards

Missing steps were identified by other members of the team during the brief.

8. Quizzing Crew for Feedback (suggested topics)

- Query crew on understanding task/hazards or other topics Yes No

Crew had stepped in at different points to elaborate on the hazards.

- Ask what could happen that would prompt them to stop the task and revisit the JSA?



Job

Safety

Analysis

Audit

Comments:

Task was to calibrate the ladder depth sensor. The brief was given by Ryan. JSA brief was done in the lever room to have the leverman as part of the brief. The individual giving the JSA brief was a fairly new employee and did not seem to fully understand the task. Other members of the team stepped in and helped him point out what was missing and what could be elaborated on further. A second JSA brief was conducted on the cutter service platform by Ashley to reinforce the task for the people on the platform that were working in that task area. The JSA form covered the major task and had the steps of the procedure listed on the JSA. I have spoken with both Ashley and Gino about the way JSAs are written for tasks in the engine room to compare approaches. Ashley called change of condition (Time Out) on the cutter service platform to talk to Geno in the leverroom about the readings during the calibration. Ryan could use more practice briefing the JSA and being thorough in his approach.

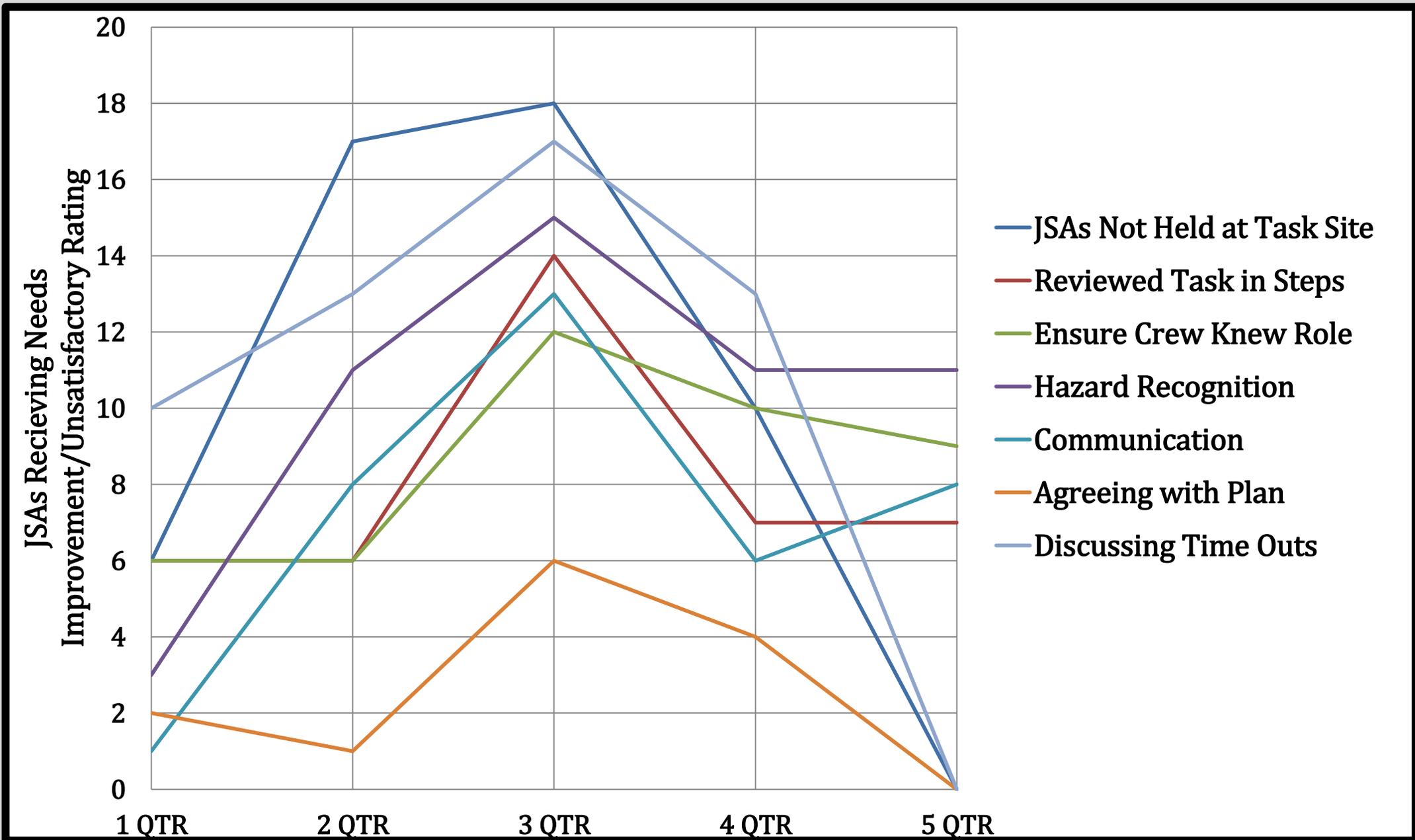
Report Back

- Discussed with: (Check Choice(s)) SSHA Captain Chief PM SM Task Supervisor

	Very Good	Satisfactory	Needs Improvement	Unacceptable
- Ask Task Supervisor to Rate his JSA	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Auditor Overall JSA Rating	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Job
Safety
Analysis
Audit



ACCOUNTABILITY “See it. Own it.”

PERSONAL & RELEVANT

INCORPORATES SAFETY TOOLS

LEARNING & COACHING

NEXT STEPS: IIF

SAFETY CULTURE

SAFETY TOOLS

COACHING

ACCOUNTABILITY

FRONTLINE MANAGMENT



GLDD SAFETY COMMITMENT STATEMENT

“All GLDD employees are committed to an Incident and Injury Free work environment, in which we return safely to our families”



Chicago River, 1918



Chicago River, 2014