



Hazard Management Processes

*Facilities, End-of-Life: Decommissioning,
Abatement and Demolition Workshop*

Outline

Introduction

Hazard Assessment, Elimination and Controls

- Government Regulations – Alberta Occupational Health and Safety (OHS) Act, Regulation and Code

Hazard Management Processes

- Job Safety Analysis (JSA)
- Field Level Risk Assessment (FLRA)
- Last Minute Risk Assessment (LMRA)

Waterton Demo HSE Stats

Question Period

Hazard Identification and Assessment

Government Regulations, Alberta OHS Code - Part 2 – Hazard Assessment, Elimination and Control

- Section 7 requires employers **to assess a work site and identify existing or potential hazards before work begins**. Employers must **prepare a report** that provides the results of the assessment and **specifies the methods that will be used to control or eliminate the hazards**.
- Section 8 requires employers, if reasonably practicable, **to involve workers in assessing, controlling and eliminating potential hazards**.

Hazard Identification and Assessment

Government Regulations, Alberta OHS Code - Part 2 – Hazard Assessment, Elimination and Control

Introduction

- Section 9 requires employers to eliminate hazards whenever it is reasonably practicable to do so. **If elimination is not reasonably practicable, hazards must be controlled**
- first by using **engineering controls**
- then **administrative controls**, and
- and finally, as a **last option**, by using **personal protective equipment**.

Job Safety Analysis (JSA)

Definition

- ③ A documented pre-job plan that assesses job hazards and identifies actions to reduce associated risks. With supervisor facilitation, it's done by the workers before the work is done.
- ③ Standard JSAs should be prepared well in advance and must be reviewed / adjusted immediately prior to the task as necessary.

Job Safety Analysis (JSA)

Objectives

- ③ **Focus** workers' attention on the job
- ③ Perform a **group assessment** of the task and of the crew to ensure the work can be done safely
- ③ **Identify and eliminate** potential workplace practices and hazardous conditions that could lead to a loss
- ③ Achieve a **structured** approach to safe job planning

Job Safety Analysis (JSA)

Why Develop a JSA?

- ③ To ensure that hazards are identified and controlled for all major tasks and processes.
- ③ Job Safety Analysis (JSAs) represent a proactive means of identifying and eliminating hazards.

Job Safety Analysis (JSA)

Benefits of a Job Safety Analysis

- ③ Proactively identifies hazards and actions to take to minimize and/or eliminate these hazards.
- ③ Helps to establish proper job procedures.
- ③ Helps standardize common job tasks/processes.
- ③ Serves as an excellent “safety training” and “daily site safety meeting” tool.
- ③ Great tool for hazard analysis regarding new tasks, new equipment, or procedures that are non-routine.

Job Safety Analysis Process

Selection of job or task.

- ③ Incident or injury experience.
- ③ High potential for injuries.
- ③ Significant near losses.
- ③ Root cause analysis from Task Observations or Near Miss and Incident Investigations.
- ③ New/modified equipment or procedures.

Job Safety Analysis Process

Choose development team members.

- ③ Use “job experts.”
- ③ Familiarity with overall process.
- ③ Knowledge of hazard analysis techniques.

Job Safety Analysis Process

The JSA process has three steps:

- ③ Identify the **steps and activities** of the job (Step 1).
- ③ Identify the **specific hazards** associated with each step of the task (Step 2).
- ③ **Develop mitigating actions** for each of the hazards (Step 3).

Job Safety Analysis Process

Step 1. List the Steps of the Task

Team observes task, reviews procedure.

List key steps in order.

Should be reduced down to one or two pages maximum.

Discuss steps with employees doing the work.

Modify as required.

Observe at different times/conditions.

Finalize clear and concise steps for task.

Job Safety Analysis Process

Step 2. Identify the Hazards

While observing and reviewing procedures, determine:

What are the hazards?

What could go wrong?

How could someone get hurt?

How could a loss occur?

List the hazard associated with each step.

Obtain input from employees doing the work.

Job Safety Analysis Process

- ③ **Environmental Conditions:** Are there any conditions that may be hazardous to safety or health?
- ③ **Injurious Contact:** Is there a danger of striking against, being struck by, caught between, caught on, caught in, or otherwise making harmful contact with an object?
- ③ **Overexertion:** Can a strain be caused by pushing, pulling, lifting, bending, twisting, or by repetitive motion?
- ③ **Slips, Trips, and Falls:** Is there a potential for this type of occurrence?
- ③ **Other Key Safety Behaviors**
 - e.g. proper PPE, correct tools available, communications between work groups adequate for safe performance, critical equipment tracked and included in preventive maintenance?

Job Safety Analysis Process

Step 3. Develop Mitigating Actions

- ③ For each hazard or potential hazard, first attempt to **eliminate** the hazard:

engineer or redesign to eliminate the hazard

combining or changing sequence of steps

- ③ If safer and better steps can be used, list each new step:

write in enough detail for worker to follow

avoid general statements like: “Be careful”, “pay attention”

Job Safety Analysis Process

- ③ Consider additional safety equipment to reduce hazards
- ③ If no new procedures can be developed, can physical changes be made?
 - redesigning equipment
 - changing tools
 - adding machine guards
 - personal protective equipment

Job Safety Analysis Process

Communicate results and conduct appropriate training.

communicate as needed for training and sharing of information

Supervisor follows up on JSAs for field verification and validation

Field verification and validation by supervisors.

Supervisor follows up with workers to conduct field level risk assessments to assess site-specific hazards and conditions before work commences.

Continuous improvement - not a one-time effort.

Job Safety Analysis Summary

- ③ Standard JSAs to be developed for pre-defined activities by supervisor, workers, and SH&E experts.
- ③ JSA is a real time, work site tool for the workers.
- ③ It is reviewed immediately before a job begins and is done on the worksite by those who will be doing the work.
- ③ JSA can support a general procedure and can be supported by Pause or Stop and Think moments.
- ③ Ensure the risk reduction actions are being used during the work.

Field Level Risk Assessment

The Field Level Risk Assessment (FLRA) is conducted by workers at the job site to identify any other hazards that are present due to site or equipment conditions.

The FLRA is used to probe day-to-day operational and procedural systems to identify hazards that have been overlooked in the equipment or process design, e.g. change post start-up, lack of proper procedures or training, equipment or process modification.

Field Level Risk Assessment

The Field Level Risk Assessment (FLRA) is documented to identify additional hazards or controls that may be required to protect all worker at the worksite and may include the use of other forms or checklists such as (but not limited to):

- Field Level Risk Assessment cards
- Cold or Hot Work Permits
- Confined Space Entry permit
- Ground Disturbance Checklists
- Work at Heights Checklists
- Critical Lift Checklists
- Mobile Lift Equipment Checklists

Last Minute Risk Assessments

Definition:

A brief, individual, mental hazard assessment of a task and the worker(s). It is done by the worker(s) before and during the work.

This process is arguably the most powerful, effective and genuinely proactive of all the behaviour based tools used. It's simplicity and ease of use is disproportionately minute compared to its value.

Last Minute Risk Assessments

Goals

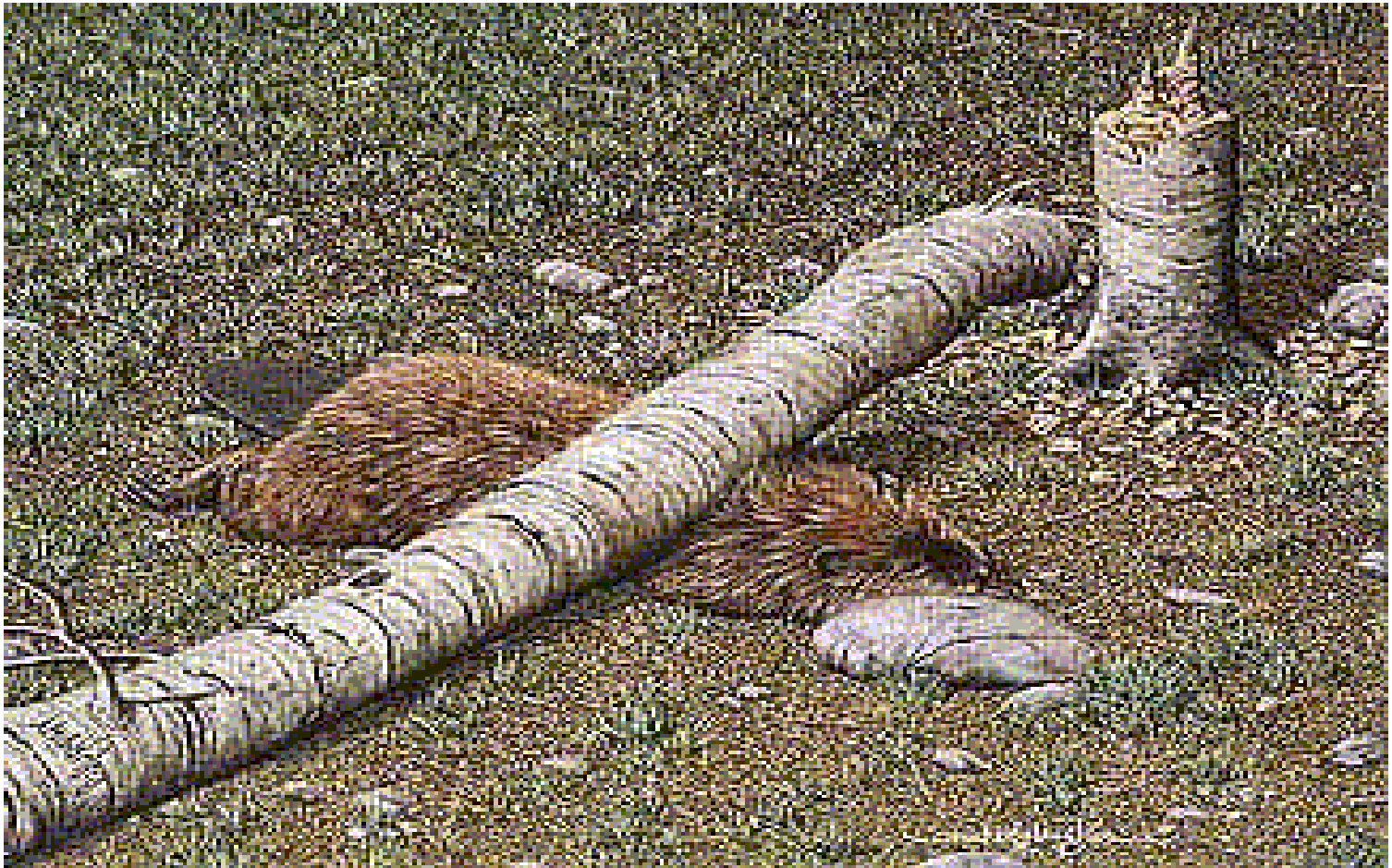
- ③ **Focus** the worker's attention on the task
- ③ **Assess** the task and the worker
- ③ **Identify and eliminate** unsafe behaviours and hazardous conditions.
- ③ **Take the Action**
- ③ Create a culture where workers are **constantly assessing** their own actions and work site for hazards.

Last Minute Risk Assessments

Benefits and Strengths

- ③ Empowers employees as loss prevention experts.
- ③ Integrates prevention of losses with operating procedures.
- Genuinely proactive and easy to use

Even if we were born to do a task it does not always mean we will do it safely!



WHY DO INCIDENTS STILL HAPPEN?



Last Minute Risk Assessments

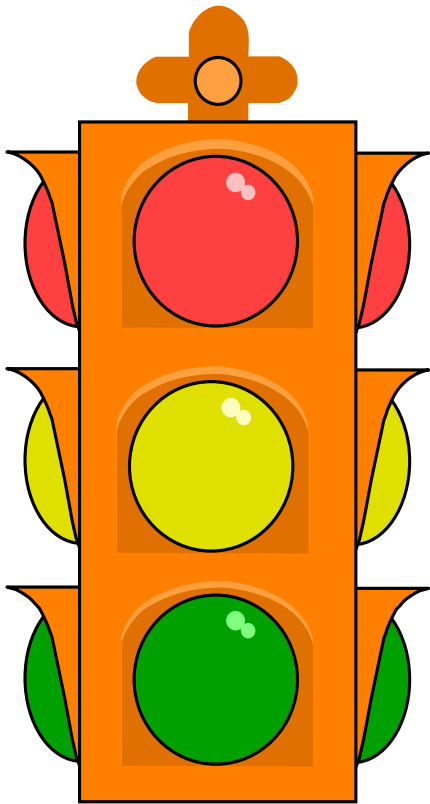
Two examples of Last Minute Risk Assessment Processes

- ③ Shell – **“Pause Process”**
- ③ Imperial Oil – **“Stop and Think”**
- ③ Different Models with the same GOAL.

What is PAUSE

- **A tool/process to help people to identify hazards**
- **Disciplined thought process**
- Simple – easy to use at the work site, **no new paperwork**
- Dynamic
 - to be used during all stages of planning **and** as the job is executed
 - it's proactive, not reactive

PAUSE: Use Traffic lights



= STOP!

= PROCEED WITH CAUTION

= SAFE TO PROCEED

Shell - PAUSE

- **No one can plan for every eventuality**
- **Things change:**
 - **Scope**
 - **Unexpected events**
 - **Local activities**
 - **People**
 - **Weather**
 - **Circumstances**

Everyone has to be responsible for their own and co-workers' safety

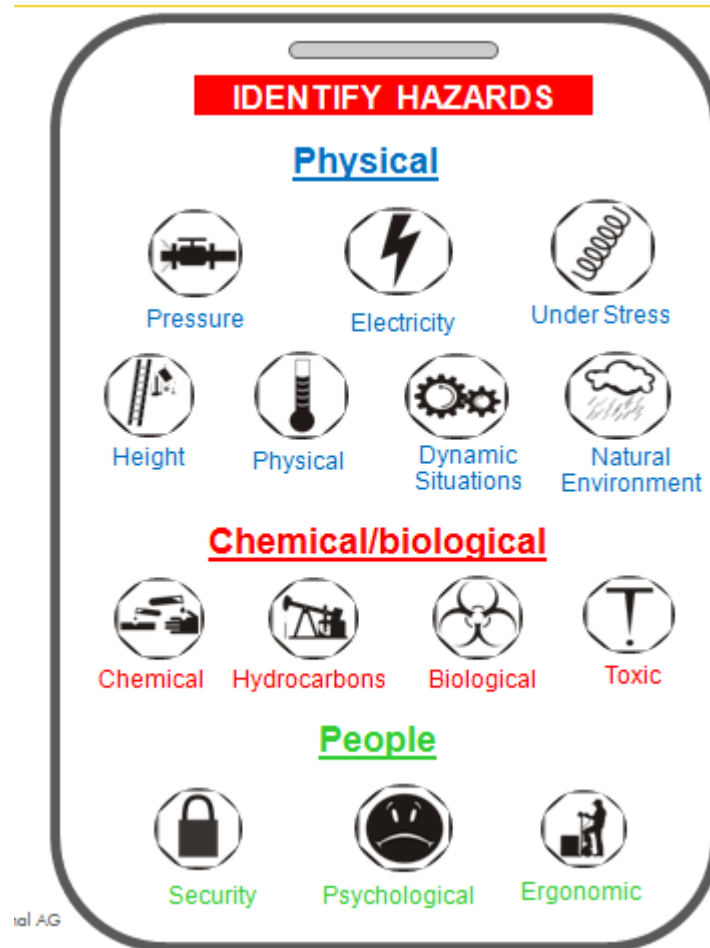
Shell - PAUSE

A self / team / colleague intervention to assess/re-assess hazards.... For EVERY job!

- **Pause after breaks**
- **Pause if you see a yellow or red light**
- **Build Pauses into your work plan**

Key is for people to ask questions, engage everybody and collectively agree on any actions

The '**PAUSE**' pocket card provides prompts on the what needs to be considered during this mental process.



The process is relatively simple

Enables you to consistently and continually recognize and manage safety hazards during your work.....

...to eliminate incidents and injuries.



HSE Stats Waterton Demo

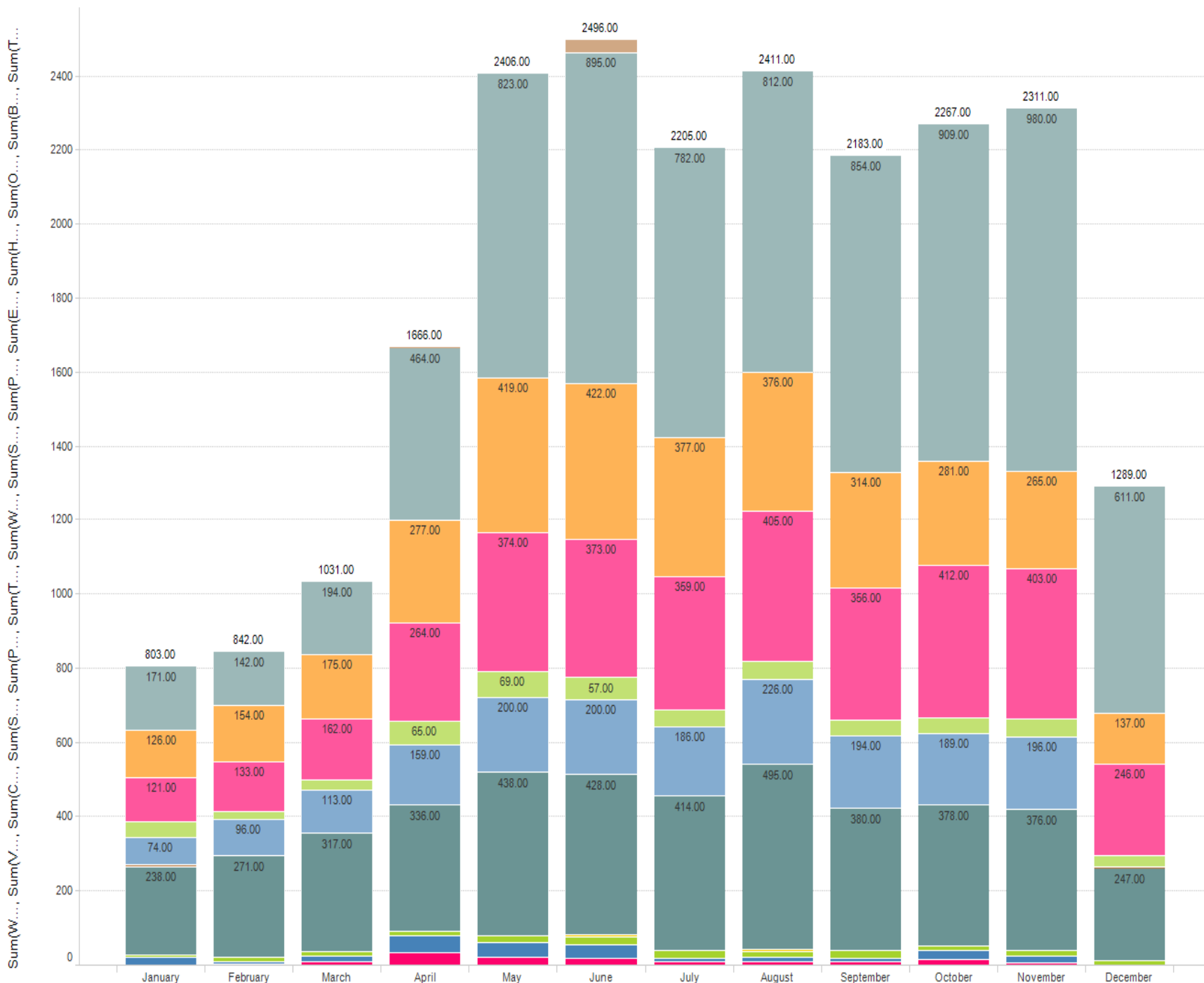
2009-11	Mileage	Manhours	Worker Orientations	Visitor/Vendor Orientations	Contractor Leadership Tours	Shell Leadership Tours	Pre-Project Hazard Assessment Developed/Reviewed	THA/JSA Developed/Reviewed	Weekly/Monthly Safety Meetings	Safe Work Permits	Pre Job / Tool Box / Weekly Safety Meetings	Emergency Exercises	HSE Audits and Inspections	Other	Behavior Based Observation (BBO) Cards	Training, new and re-qualification	Unsafe Conditions (Hazard Ids)	Near Misses Reported	Lost Time Incidents	Restricted Work Cases	Medical Aid	First Aid	Fuel leak or spill	Environmental Incidents	Other (Automotive, Equipment Damage etc..)
January	63371	14030	4	24	20	6	0	663	7	254	111	1	453	314	847	0	93	23	0	0	0	1	0	0	0
February	58660	6689	5	10	17	4	0	627	8	224	121	1	349	361	450	0	44	9	0	0	0	0	0	0	1
March	73987	8027	12	26	13	6	0	707	8	251	95	1	430	425	455	34	50	1	0	0	0	0	0	0	1
April	65744	11026	40	67	11	11	0	694	9	277	108	1	573	433	703	4	71	0	0	0	0	0	0	0	1
May	74512	17409	28	61	18	5	0	737	7	325	108	0	653	522	1028	6	72	4	0	0	0	2	0	0	0
June	89074	19070	148	63	34	12	0	1178	9	295	547	4	621	1458	1365	47	78	7	0	0	0	0	0	0	0
July	78793	21440	45	27	35	11	0	1578	8	325	878	4	959	566	1667	14	106	9	0	0	1	1	0	0	0
August	80718	25030	19	26	35	16	0	1855	11	364	878	1	1273	520	1732	1	117	4	0	0	0	0	0	0	0
September	96767	25315	31	29	51	13	0	2277	11	336	953	3	1598	494	1893	0	134	3	0	0	0	1	0	0	1
October	35606	19767	18	25	24	8	0	1582	4	189	787	1	1268	429	1537	0	62	4	0	0	0	1	0	0	0
November	41921	19382	9	16	22	3	0	1192	4	196	593	2	743	367	1451	0	85	5	0	0	1	2	0	0	1
December	38214	10755	0	1	13	4	0	353	3	3	64	1	417	201	766	0	31	0	0	0	0	0	0	0	0
Total	797367	197940	359	375	293	99	0	13443	89	3039	5243	12	9337	6090	13894	106	943	69	0	0	2	8	0	0	5
Proactive Safety Measures															52379										
Unsafe Conditions															1012										
Recordable Incidents															15										
Proactive Safety Index															265										

Data table:
PLANT 1 DEMO 2010 ProAct

Marking:
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Color by

- Sum(Worker Orientations)
- Sum(Visitor/Vendor Orien
- Sum(Contractor Leadersh
- Sum(Shell Leadership To
- Sum(Pre-Project Hazard
- Sum(THA/JSA Developed
- Sum(Weekly/Monthly Saf
- Sum(Safe Work Permits)
- Sum(Pre Job / Tool Box /
- Sum(Emergency Exercise
- Sum(HSE Audits and Ins
- Sum(Other)
- Sum(Behavior Based Obs
- Sum(Training, new and re

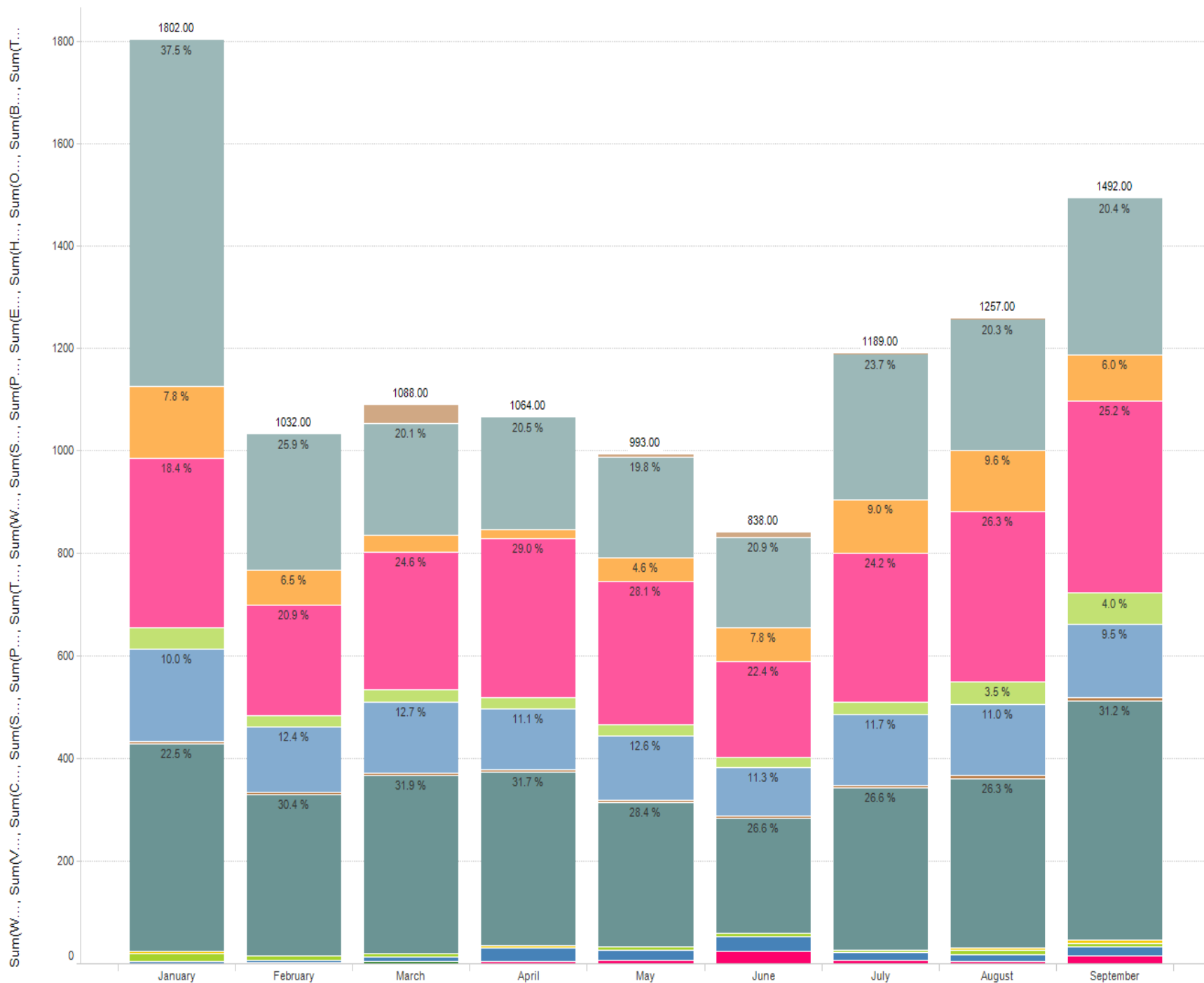


Plant 1 Demo 2010

Data table:
PLANT 1 DEMO 2011 ProAct

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Plant 1 Demo 2011

QUESTIONS?



UA Onshore Projects