Commission on Behavioral Applications
Cambridge Center for Behavioral Studies

July 26, 2005

To: CCBS Commission on Behavioral Applications

From: Bill Hopkins and Dwight Harshbarger

Executive summary of site visit observations and recommendations

On June 22 - 24, 2005, we visited the Halliburton Gulf of Mexico Operations for purposes of a behavioral safety program site-review for CCBS Accreditation.

A complete report of our site visit observations follows this summary.

Recommendation to the CCBS Commission on Behavioral Applications

The accreditors recommend to the Cambridge Center's Commission on Behavioral Applications that Halliburton's Gulf of Mexico Operations integrated safety program be accredited as an exemplary safety program with a Principles of Behavior Based Safety program as a core component; that this accreditation be for a period of three years.

This recommendation is conditional based on:

1. Completion of necessary revisions of the application,
2. Cooperation in further analysis of safety data,
3. Agreement to update safety performance data on the CCBS web site every 6 months.

The program observations and recommendations of the site visitors are available in the Executive Summary, above, and in Appendix A at the end of this report. Recommendations.

Copyright © 2006 Cambridge Center for Behavioral Studies

General Observations

1. The PBBS program is effectively integrated with Health-Safety-Environment initiatives; the programs function seamlessly as a single program.

   Injury incident rates are well below the performance of other Halliburton regions, and well below industry comparisons provided by the Bureau of Labor Statistics.

   GOM incident rates have been sustained at low levels for several years and have progressively improved over time.

2. The BBP programs and processes as described in the application, sampled by site-reviewers in work sites, occur as described in the application. They operate with consistency and in accordance with sound behavioral practices.

3. Safety data entered in the data base are valid. The injury investigation methods appear to be thorough. A number of built in-security procedures prevent anyone from tampering with the data. The data CCBS reviewed are aggregate data based on multiple locations, only some of which were visited and observed. Individual sites may vary in their safety performance.

5. Employees engage in the BBP GATOR (Gulf Coast Action Team Observing Risk) program in positive and appreciative ways.

6. The program leadership is energetic and effective –
   - There is an effective and fully functioning Steering Committee.
   - The Leadership Team, comprised of senior managers, actively promotes and supports BBP.
   - The program facilitator is passionate about the program and appropriately focused.

Recommendations for Halliburton's Gulf of Mexico Operations and GATOR

1. GATOR observers, observations
   - Consider steps to increase the number of trained observers; for example, going through observation training could be a company requirement, though participation in the program as an observer could remain, as it now is, voluntary.
   - Develop and implement methods to document, post and reinforce desirable rates of observations by work groups and individual observers.
   - Monitor exactly which employees are observed.
   - Shape and reinforce the behavior of making observations, giving feedback.

Copyright © 2006 Cambridge Center for Behavioral Studies

- Examine the distribution of observers across work groups; make sure that observers are proportionally represented in all work groups and departments.
- Give attention to local sites and PSLs re contact rates - measure, give feedback, and reinforce progress in the achievement of incremental steps towards contact rate goals for each site, each PSL.

2. Gator coaches
    - Develop and implement methods to document, post and reinforce desirable rates of coaching among qualified coaches. Shape and reinforce the coaching participation and behavior.

3. Getting below zero
    - Give additional importance and reinforcement to programs now in place, such as "Beyond the Red Zone", that focus on recording near misses and similar hazard measurement as ways to deepen effective safety practices.
    - As part of this effort, continue and increase GATOR's attention to application of behavioral safety practices in employees' homes and families.

4. WIN – work design and equipment improvements
    - Increase the reinforcement and recognition for work groups who successfully observe and implement changes in work design and equipment.

5. Observations and coaching in drilling operations, off-shore and on-shore
    - Off-shore and on-shore drilling customers' work and time utilization requirements place constraints on coaching opportunities and to a lesser degree on making observations.
    - Consider the development of alternative observation and coaching methods for off-shore and on-shore drilling operations. For example, do observations during the performance of jobs in ways that permit integration with brief periods of observations.
    - Coaching might be delayed for off-shore teams until the return to land-based work, or for on-shore drill teams after they return to their PSL home sites, within a specified period of time. For example, within 24 hours after the observation and / or arrival on shore or at the PSL home site.
    - Work to install at least one observer and one coach in every off-shore and on-shore drilling team.

6. Continue efforts to expand ergonomics analyses of job demands and performance.

7. Assess ways to extend BBP and the integrated safety program into other regional operations of Halliburton.

Copyright © 2006 Cambridge Center for Behavioral Studies

- Compare estimates of the total (direct and indirect) costs of incidents and injuries across regions; develop the business case for the value of GOM safety effectiveness in both human and financial terms.
- Offer GOM-based training opportunities to other parts of the company.
- Assess the possibility of intra-company streaming of BBP training and program development.
- Publicize the achievement of accreditation standards; challenge other regions to work equally safely and meet these standards.

Site Visit Report
Halliburton Gulf of Mexico NWA Operations

Commission on Behavioral Applications
Cambridge Center for Behavioral Studies

July 26, 2005

To: CCBS Commission on Behavioral Applications

From: Bill Hopkins and Dwight Harshbarger

Recommendation to the CCBS Commission on Behavioral Applications

The accreditors recommend to the Cambridge Center's Commission on Behavioral Applications that Halliburton's Gulf of Mexico Operations integrated safety program be accredited as an exemplary safety program with a Principles of Behavior Based Safety program as a core component; that this accreditation be for a period of three years.

This recommendation is conditional based on:

4. Completion of necessary revisions of the application,
5. Cooperation in further analysis of safety data,
6. Agreement to update safety performance data on the CCBS web site every 6 months.

The program observations and recommendations of the site visitors are available in the Executive Summary, above, and in Appendix A at the end of this report. Recommendations.

Copyright © 2006 Cambridge Center for Behavioral Studies

Application Review

The Accreditors reviewed and approved the application of Halliburton – Gulf of Mexico GATOR – Gult Coast – Action – Team – Observing Risk. The application followed the CCBS on-line standards outlined in PBBS Application Kit 1.0 and PBBS Accreditation Standards 1.0.

Site Visit

On June 22 - 24, 2005, Dr. Bill Hopkins and Dr. Dwight Harshbarger visited the Halliburton Gulf of Mexico Operations for purposes of a behavioral safety program site-review for CCBS Accreditation.

Halliburton Identifying Information

- Name of the Organization – Halliburton Gulf of Mexico NWA – GATOR BBS
- Location of Corporate Office – 110 Capital Drive – Lafayette Louisiana (Gulf of Mexico Operations)
- Houston Texas – Global Headquarters for Halliburton Energy Services Division.
- Name of company representative in charge of the application. Chris Schafer
- Phone Numbers of the representative – Office – 337.266.8265 Cell – 37.849.6014
- Address of the Representative – 110 Capital Drive – Lafayette, Louisiana 70508
- E-Mail address of the representative – chris.schafer@halliburton.com

Halliburton is a world-wide company employing approximately 90,000 employees providing services to most every country in the world. Halliburton Company has two main sub-companies, Halliburton Energy Services (HES) and Kellogg, Brown and Root (KBR). KBR is primarily a heavy construction company and HES provides services to the oil and gas industry.

HES is organized by Natural Work Environments (NWA). The Gulf of Mexico (GOM) NWA is one of 6 NWAs in the USA. An NWA is composed of many product service lines (PSL) to the oil and gas industry, but all of the PSLs report to the NWA leadership. The Health, Safety and Environment (HSE) department in the Gulf of Mexico covers all of the GOM NWAs- every PSL follows the same HSE policies and reports to the HSE Operations Manager in the Gulf.

Gulf of Mexico NWA

The Gulf of Mexico NWA is Halliburton's largest NWA with 2182 employees and 43 facilities. Geographically the area is the smallest NWAk covering south Louisiana and eastern coastal Texas. GOM provides oil and gas services to customers in the Gulf of Mexico waters, inland waters (marches, swamps) and land oil and gas wells. GOM has approximately 750 vehicles and a fleet of marine vessels to aid in our service delivery.

Copyright © 2006 Cambridge Center for Behavioral Studies

The Gulf of Mexico operations are the most diverse operations that Halliburton has world wide, and a proving ground for new technology and procedures for world wide operations.

In the Gulf of Mexico GATOR (Gulf Action Team Observing Risk) is involved only in the Energy Services Division. All numbers provided in employee headcounts, facilities, and locations are for the Energy Services Division only.

Product Service Lines (PSLs)

Fluids Division -

Baroid- Baroid PSL provides drilling fluid services to the oil and gas field.. The drilling fluid or completion fluid keeps the oil well under control until the well is completed. Baroid has 396 employees

Cement- Cement PSL provides cementing services to the oil and gas industry. Once a well is drilled, a customer runs steel conduit to produce the well, the steel conduit is cemented in place by our Cementing PSL. Cement PSL has 300 employees. The company began in cementing.

Summary of Fluids Division- Baroid and Cement are the largest PSL's in the GOM Operations. Most of their 25+ facilities are coastal facilities varying from 1 to 25+ employees.

Completions and Reservoir Optimization Division – CRO –Completion Products and Services (CPS) Once a well has been cemented, the customer needs a completion plan to optimize oil and gas production. This PSL designs the completion plan and then implements the completion plan for the customer. CPS has 185 employees.

Tools-Testing & Tubing Conveyed Perforating- TTTCP provides tools that can be attached to a drill string to provide a service to an oil or gas well. TTTCP also explosively perforates an oil or gas well once it has been cased and cemented to bring the well on line. TTTCP employees 127 employees.

CRO Division Summary- The second largest PSL in the GOM; services involve complex technologies and well-trained location service providers.

Sperry Sun- does evaluation and direction surveying while drilling an oil well. Sperry Suns tools are attached to the drill pipe and while drilling capture instantaneous information about the formation that a customer can utilize to make decisions. Sperry Sun Sperry Sun has 297 employees.. Sperry Sun was acquired in the late 1990's through the acquisition of Dresser Industries.

Production Enhancement Division- (PE)- enhances existing producing wells. PE is composed of four distinct separate services.

FA/SC – Frac Acid and Sand Control – Provides services to fracture a formation to optimize production, and controls the sand that can be produced from a

Copyright © 2006 Cambridge Center for Behavioral Studies

deteriorating formation. FA/SC has 108 employees based at Port Fourchon and New Iberia.

CT – Coil Tubing – Uses rigid steel tubing that is rolled on a drum to deliver services in wells that are highly deviated. Coiled Tubing has 55 employees.

N2 – Nitrogen – utilizing nitrogen to stimulate wells – Nitrogen has 20 employees.

HWO Hydraulic Work Over –provide maintenance to existing wells. HWO has 20 employees.

Production Enhancement Division Overview - Together the 4 sub-PSL provide some of the most physically demanding jobs in the oil field. There are over 200 employees.

Logging and Perforating – Logging provides Seismic, Reservoir Evaluation, Perforating of the oil well to make it produce, and post well completion services to customers. L&P has 153 employees.

Integrated Solutions- (IS-HDS-Landmark Digital Services) This PSL provides on site consulting services for field operations at a customers request. IS also does well decommissioning HDS (Halliburton Decommissioning Services)- capping wells that no longer produce. IS has 49 employees. IS is not presented graphically because they have 5 years of 0 Total Recordable Incident Rate.

Miscellaneous Support- This includes our Maintenance department, our procurement and materials department, and a pool of engineers that are utilized by PSL's,

Maintenance has 79 employees distributed across facilities.

Security DBS – (SDBS) – Builds the drilling bits that drill an oil well; 19 employees. SDBS is not presented graphically because they have 5 years of 0 Total Recordable Incident Rate

Wellnite- An nitrogen service provider to the oil and gas industry; 20 employees. Wellnite is not presented graphically because they have 5 years of 0 Total Recordable Incident Rate

ESG Management – (ESG) Energy Services Group, this is composed of the divisional VP, the Operations Managers of the PSL's and the support staff to those managers.

Finance- Accountants, Billing, Payroll etc.

Copyright © 2006 Cambridge Center for Behavioral Studies

Human Resource- (HR) – Works with our employees to ensure we provide our services in an ethical professional manner. HR is not presented graphically because they have 5 years of 0 Total Recordable Incident Rate

Information Technology- (IT) The support group for all computers and technology. This will not be counted as a separate PSL in 2005 reporting – they will be rolled into Miscellaneous Support Functions. IT is not presented graphically because they have 5 years of 0 Total Recordable Incident Rate

Business Development- (BD) – Business Development is our sales force in the Gulf of Mexico, we have 127 employees dedicated to one on one solution providing for our customers needs.

Other PSL- This PSL composed of our dock workers on the coast, running cranes, loading/unloading trucks and boats for the people who utilize our docks. This PSL will not be in 2005 data- the employees will be accounted for in other PSL's

The Site Visit

On June 22 - 24, 2005, site visitors Hopkins and Harshbarger selected and visited the locations, below, and at each of them observed safety programs. The first three sites were selected from a list of Halliburton GOM operations and visited on June 22.

- Houma Coteau – 5 PSLs, 100 employees
- New Iberia, Weeks Island – 6 PSLs, 125 employees
- New Iberia, Hanger Drive – 3 PSLs, 125 employees
- Sperry Sun North – 1 PSL – 100 employees
- Corporate offices – 150 employees (meetings, staff interviews)

The site visitors also sampled and reviewed the following records and data:

- Injury reports
- Reports made to OSHA
  Records of follow up actions, based on injury reports
- Gator alerts
- List of safe and unsafe behaviors
- BBP observation records
- Contact records
- Lists of people serving as coaches and observers for
- Record of last two month's participation as observers
  Record of safety audits, external or internal, including HES audits done by the corporation
- Records of non-enabled and difficult opportunities that arise out of observations and records of action taken on the deficiencies
- Records of training sessions and attendees
- Records of new hire training
- Record of Ilearn training
  Training materials or courses

Copyright © 2006 Cambridge Center for Behavioral Studies

- Records of JSA, HOC, Near Miss Reporting, TaPRoot analysis of incidents, and Smith Driving

Copyright © 2006 Cambridge Center for Behavioral Studies

An Overview of Observations by the Site Review Team

Specific observations and recommendations are detailed in the Executive Summary and Appendix A.

The visited facilities are primarily concerned with preparing and maintaining the equipment that is carried onto customer drilling sites. Much of the equipment is large and heavy and working with it carries much potential for injury.

The workers were generally working safely, using many behaviors that were prescribed in the Critical Behavior Checklists. Several workers talked with some passion about the importance of the BBP.

Observers followed the procedures described in the observer methods. On occasion, observers were seen to provide on the spot feedback to workers and in one instance an observer was instrumental in removing a hazardous condition for one worker.

Several coaches were also seen in their work with observers. It was clear that both observers and coaches were familiar with the methods described as being a part of the BBP and endorsed the program.

The site visitors sat in on part of a meeting of the GOM Leadership Team. The first part of every Leadership Team meeting is devoted to considerations of safety in general and GATOR in particular. In this meeting it was clear that there is strong commitment to GATOR. In fact, Leadership Team members broadly asked for greater participation of the BBP methods in the day-to-day operations of the PSLs.

Site visitors also visited a meeting of the GATOR Steering Committee. This committee is the owner of the BBP process. Committee members clearly had detailed working knowledge of the functioning of GATOR and assumed responsibility for making it effective.

The facilitator of GATOR works closely with the Steering Committee and ensures that the decisions of the Committee are executed in the work places of GOM. The facilitator energetically embraces his role and the goals of GATOR.

In summary, the program appears to be functioning at the level of work sites. It is well integrated with other safety programs. If there is a single criticism that is most important to the functioning of the BBP it is the fact that the observing and feedback functions of the BBP program should be occurring much more frequently than they are. This is a concern that is shared by just about everyone associated with GATOR. For example, members of both the Leadership Team and the Steering Committee argued strongly for increasing the contact rate of GATOR. Members of the Steering Committee actively discussed how the contact rate could be increased.

Copyright © 2006 Cambridge Center for Behavioral Studies

Most importantly, several lines of evidence argue for the effectiveness of the BBP. There is sustained and steady improvement in the OSHA-R rate. The OSHA-R rate at GOM is consistently considerably better than the rate at the rest of Halliburton's North American NWAs. Finally, the OSHA-R rate at GOM is consistently better than the industry average for oil services companies as reported by the Bureau of Labor Statistics.

Training – General Observations

1. Records and sampling

Training records for all employees are contained in an extensive data base. Those data were sampled for participation, completion of new or update requirements.

The company's in-house and extensive web-based training programs are part of iLearn, a computer based and easily accessed training program. Modules in such areas as Forklift Safety, Defensive Driving, Hearing Conservation, Hazard Communication, and many others are required.

The data were up to date and complete. The iLearn (see below) log contains records of each employee's training.

2. Job Duties

Job duties for each job include "safe behavior" specifications for job performance.

3. Selection requirements

All new employees must meet the following physical requirements: go through a 2 hour physical exercise, work 15 minutes overhead on a ladder, carry 100 pounds 25 feet then turn around and walk it back etc. Employees can not go onto a customer's location without six months experience in their current assignment.

Selection requirements were beyond the purpose of our site visit, but were consistently validated by employees, supervisors, and managers.

4. Training specifics

Risk Analysis and Job Safety Analysis is two of the most important components of training; all employees must complete them.

RA / JSA materials were reviewed. Training and competencies are logged in the training data base.

Copyright © 2006 Cambridge Center for Behavioral Studies

5. iLearn

iLearn is a computer-based training program, accessible from every location. Each employee is assigned learning requirements based upon job title and PSL duties. Employees are required to meet industry standard safety learning requirements in order to work in the GOM.

The overall training curriculum was reviewed. Below is a representative record.

NEO - GOM Training	Office	Field	Facility	Butch	DOT	OSHA Std	HES Std
Butch Washington - contact				NEO	Traine		
Access to Medical Records - 1 yr	X	X	X	X		X	
Alcohol / Controlled Substance	X	X	X	X			X
Back Safety - 1 yr	X	X	X	X			X
Basic Electricity		X	X	X		X	
Basic Pressure Safety		X	X	X			X
Behavior Based Performance - Chris Schafer	X	X	X	X			X
Benefits - HR Team	X	X	X	X			X
Bloodborne Path - 1 yr	X	X	X	X		X	
Career Mgmt / Ilearn / PPR	X	X	X	X			X
Class A / B Assessment		X	X		X		X
Code of Business Conduct	X	X	X				X
Confined Space - Entry (Supervisors)		X	X			X	
Confined Space Awareness - 1 yr		X	X	X		X	
Corporate Vision				X			X
CPI	X	X	X	X			X
Crane Training HES Program		X	X				X
Customer Service Workshop	X	X	X				X
Defense Work							
Diversity	X	X	X				X
DOT - Entry Level Driver Training		X	X		X		X
DOT Motor Carrier Safety / 12 day log exersize		X	X		X		X
DOT Security Training		X	X		X		X
DOT - Part One - General Knowladge		X	X		X		X
DOT - Section 5 - Air Brakes		X	X		X		X
DOT - Section 6 - Combination Vehicles		X	X		X		X
DOT - Section 8 - Tanker Vehicles- endorcement		X	X		X		X

Copyright © 2006 Cambridge Center for Behavioral Studies

DOT - Section 9 - Hazardous Material, endorcement		X	X		X		X
DOT - Section 10 - Pre-Trip Inspection - Texas		X	X		X		X
DOT -- Section 13 - Texas Commercial Permit		X	X		X		X
EAP / Employee Relations	X	X	X				X
EJCS / Customer Service- NEO							X
Smith Driving , Survival Driving, Pre/Post Trip, Uncoupling, Winch Tractors	X	X	X		X		X
Environmental Awareness		X	X	X			X
Essential Vechile Trip Inspection - Home Work		X		X	X		X
Explosives Awareness - 1 yr	X	X	X	X			X
Exxon / BP / Shell Orientation		X					X
Fall Protection/Fall Prevention/Latters		X	X	X		X	
Fire Extinguisher Training - Ficility Personal			X			X	X
Fire Protection / Prevention - 1 yr	X	X	X	X		X	
First Aid / CPR - Refresher Training 2 yr req		X					X
Fit Test - 6000 series Air Purifing - 1 yr		X	X	X		X	
Forklift - Class room		X	X	X		X	
Forklift Skills Checklist - Hands on - 3 yr		X	X	X		X	
Frac Tank Ventilation Flange - 1 yr		X	X	X		X	
H2S - 1 yr		X	X	X		X	
Hand-held Power Tool Safety		X	X	X			X
Hazcom - 1 yr	X	X	X	X		X	
HazMat Transportation - DOT Requirement - 3 yr		X	X		X		X
Health & Safety Handbook - Home Work NEO	X	X	X	X			X
Hearing Conservation - 1 yr	X	X	X	X		X	
Heavy Equipment Driving - 3 yr							
Heat Stress		X	X				X
Hazard Observation Card	X	X	X	X			X
HMS	X	X	X	X			X
Hot Work Permit			X			X	
Incident Report	X	X	X	X			X
ISO 14001	X	X	X	X			X
JSA Training	X	X	X				X
LOTO		X	X	X		X	
Mentoring Program							X
Nitrogen Safety / CO2 Frac		X	X	X			X
PII	X	X	X	X			X
PPE		X	X	X		X	
Radiation - Awareness - 1 yr	X	X	X	X			X
Radiation - Densometer End User - 1 yr		X	X	X			X
Respirator 1 & 2 -		X	X	X		X	
Precision Driving - 2 yr	X	X	X				X
Safety Huddle	X	X	X	X			
Tap Root	X	X	X				X

The GATOR Behavior Based Process (BBP), Safety Training, Behavior Observations, and Feedback

The GATOR process is owned by a steering committee. A facilitator organizes and carries out the high-level work of the process. The actual work of GATOR is carried out by volunteer observers who are supervised by volunteer coaches.

1. Observer Class

Any Halliburton Employee in the GOM can be trained to become a GATOR Observer, from receptionist to a Divisional VP. Observer training is voluntary. Observer Classes are taught at operational facilities.

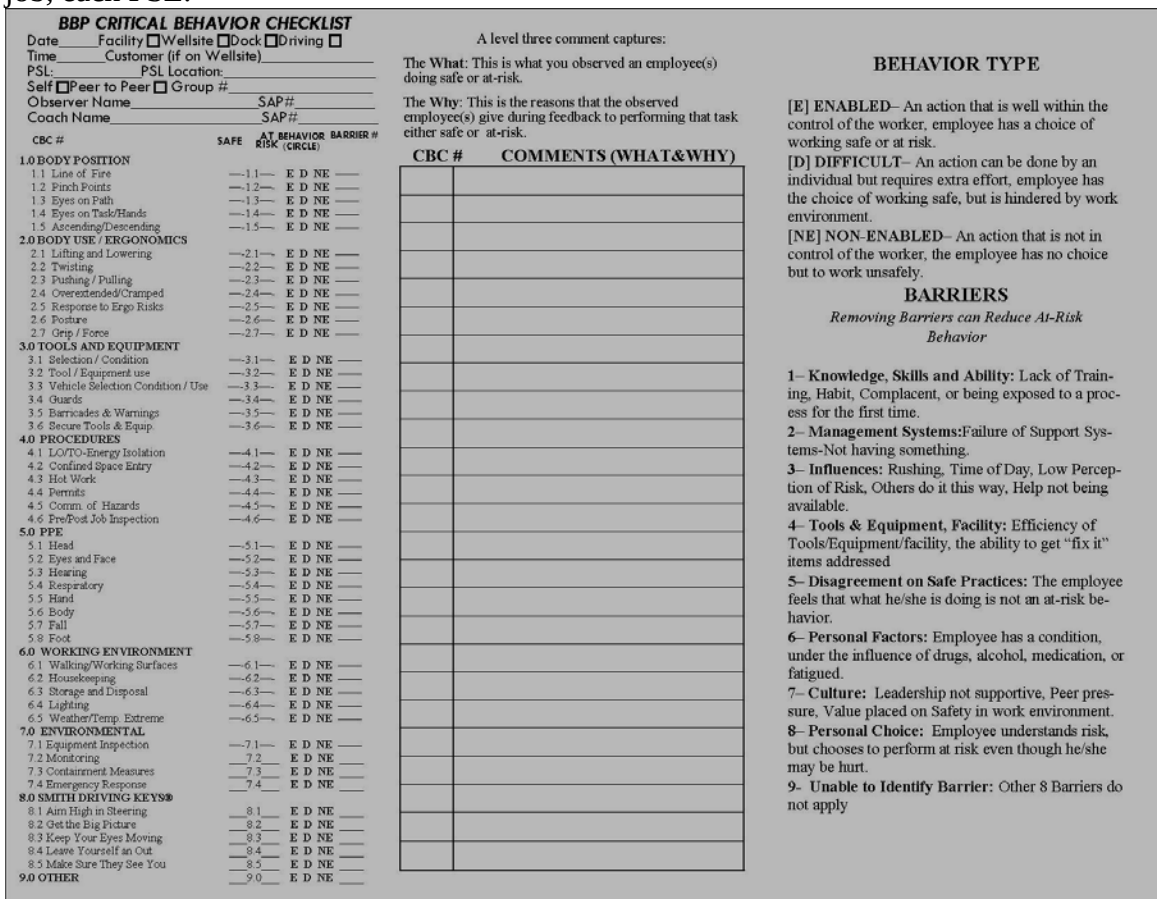
Copyright © 2006 Cambridge Center for Behavioral Studies

A syllabus of the GATOR Observer Class

Value Moment
GOM GATOR Rollout Presentation
Observer Manual Sec 1-3
BST Movie #1 – Fundamentals of BBP
Observer manual Sec 4 - Critical Behavior Checklist
Observer Manual Sec 5 – Barriers to Safe Operations
Observer Manual Sec 6 – Writing Comments Based on Observed Behaviors
Observer Manual Sec 7 – Performing Observations
BST Movie #4 Observations and Feedback
Observer Manual Sec 8 – Generating Feedback to Observed Behaviors
Observation Practical
Course Pluses / Deltas

Observer Class is an 8 Hour class – employee training for BBP is captured in their iLearn Training Requirements.

Critical Behavior Checklist (CBC, below), specifies key safety behaviors for each job, each PSL.



BBP CRITICAL BEHAVIOR CHECKLIST

Date_____Facility ☐Wellsite ☐Dock ☐Driving ☐
Time_____Customer (if on Wellsite)_____
PSL:_____PSL Location:_____
Self ☐Peer to Peer ☐ Group #_____
Observer Name_____SAP#_____
Coach Name_____SAP#_____

CBC #	SAFE	AT RISK BEHAVIOR (CIRCLE)	BARRIER #
1.0 BODY POSITION			
1.1 Line of Fire	1.1	E D NE	
1.2 Pinch Points	1.2	E D NE	
1.3 Eyes on Path	1.3	E D NE	
1.4 Eyes on Task/Hands	1.4	E D NE	
1.5 Ascending/Descending	1.5	E D NE	
2.0 BODY USE / ERGONOMICS			
2.1 Lifting and Lowering	2.1	E D NE	
2.2 Twisting	2.2	E D NE	
2.3 Pushing / Pulling	2.3	E D NE	
2.4 Overextended/Cramped	2.4	E D NE	
2.5 Response to Ergo Risks	2.5	E D NE	
2.6 Posture	2.6	E D NE	
2.7 Grip / Force	2.7	E D NE	
3.0 TOOLS AND EQUIPMENT			
3.1 Selection / Condition	3.1	E D NE	
3.2 Tool / Equipment use	3.2	E D NE	
3.3 Vehicle Selection Condition / Use	3.3	E D NE	
3.4 Guards	3.4	E D NE	
3.5 Barricades & Warnings	3.5	E D NE	
3.6 Secure Tools & Equip.	3.6	E D NE	
4.0 PROCEDURES			
4.1 LO/TO-Energy Isolation	4.1	E D NE	
4.2 Confined Space Entry	4.2	E D NE	
4.3 Hot Work	4.3	E D NE	
4.4 Permits	4.4	E D NE	
4.5 Comm. of Hazards	4.5	E D NE	
4.6 Pre/Post Job Inspection	4.6	E D NE	
5.0 PPE			
5.1 Head	5.1	E D NE	
5.2 Eyes and Face	5.2	E D NE	
5.3 Hearing	5.3	E D NE	
5.4 Respiratory	5.4	E D NE	
5.5 Hand	5.5	E D NE	
5.6 Body	5.6	E D NE	
5.7 Fall	5.7	E D NE	
5.8 Foot	5.8	E D NE	
6.0 WORKING ENVIRONMENT			
6.1 Walking/Working Surfaces	6.1	E D NE	
6.2 Housekeeping	6.2	E D NE	
6.3 Storage and Disposal	6.3	E D NE	
6.4 Lighting	6.4	E D NE	
6.5 Weather/Temp. Extreme	6.5	E D NE	
7.0 ENVIRONMENTAL			
7.1 Equipment Inspection	7.1	E D NE	
7.2 Monitoring	7.2	E D NE	
7.3 Containment Measures	7.3	E D NE	
7.4 Emergency Response	7.4	E D NE	
8.0 SMITH DRIVING KEYS®			
8.1 Aim High in Steering	8.1	E D NE	
8.2 Get the Big Picture	8.2	E D NE	
8.3 Keep Your Eyes Moving	8.3	E D NE	
8.4 Leave Yourself an Out	8.4	E D NE	
8.5 Make Sure They See You	8.5	E D NE	
9.0 OTHER	9.0	E D NE	

A level three comment captures:

The **What**: This is what you observed an employee(s) doing safe or at-risk.

The **Why**: This is the reasons that the observed employee(s) give during feedback to performing that task either safe or at-risk.

CBC #	COMMENTS (WHAT&WHY)

BEHAVIOR TYPE

[E] ENABLED– An action that is well within the control of the worker, employee has a choice of working safe or at risk.
[D] DIFFICULT– An action can be done by an individual but requires extra effort, employee has the choice of working safe, but is hindered by work environment.
[NE] NON-ENABLED– An action that is not in control of the worker, the employee has no choice but to work unsafely.

BARRIERS

Removing Barriers can Reduce At-Risk Behavior

1– Knowledge, Skills and Ability: Lack of Training, Habit, Complacent, or being exposed to a process for the first time.
2– Management Systems: Failure of Support Systems-Not having something.
3– Influences: Rushing, Time of Day, Low Perception of Risk, Others do it this way, Help not being available.
4– Tools & Equipment, Facility: Efficiency of Tools/Equipment/facility, the ability to get "fix it" items addressed
5– Disagreement on Safe Practices: The employee feels that what he/she is doing is not an at-risk behavior.
6– Personal Factors: Employee has a condition, under the influence of drugs, alcohol, medication, or fatigued.
7– Culture: Leadership not supportive, Peer pressure, Value placed on Safety in work environment.
8– Personal Choice: Employee understands risk, but chooses to perform at risk even though he/she may be hurt.
9- Unable to Identify Barrier: Other 8 Barriers do not apply

The CBC reflects experience in areas of risk in incidents over the years. The CBC is reviewed and revised periodically. There are multiple versions of the CBC.

The Tally Book Version – Oil field employees commonly carry a 3.5 x 8 inch notebook to record work processes, equipment readings, etc. The CBC is adapted to fit the Tally Book format, and used for safety observations.

Four Page Electronic Version – For those employees that have access to email and work at remote locations or assigned to customers rigs, this form allows and observer to type up observations, save them via email to coaches or steering committee members.

Four Page Version – The same as the four page electronic version – but can be printed and used instead of the tally book version.

Every CBC has one definition and three examples of the observed behavior.

A popular method to help reinforce observed safe and at-risk behavior and the use of the CBC is a game called DEFINGO, similar to Bingo – but with CBC numbers as the game board. Examples of safe and at-risk behaviors are identified by picking the right CBC that has a number in the example given. Prizes are awarded for correct performance.

2. Observer Roles and Responsibilities

Below is the defined Roles and Responsibilities of a GATOR Observer discussed and Taught in Observer Class – these roles are defined on a Steering Committee Level.

1. Be a leader in safety and serve as a role model.
2. Demonstrate a commitment to the process. (2 observations / week)
3. Ensure confidentiality in all observations.
4. Provide soon, certain, and positive feedback to the Observee.
5. Perform a minimum of two observations every week.
6. Provide quality comments on the CBC.
7. Perform fair and impartial observations.
8. Ensure the confidentiality of all collected data.
9. Provide feedback to Steering Committee on issues, concerns, or questions.
10. Perform observations in a respectful and courteous manner.
11. Focus observations on behaviors, not on company policies, rules, or regulations.

Observers do not serve as safety police – do not enforce rules or regulations. They look for safe and at-risk behavior.

Is he lifting or lowering properly ?
Is he keeping his eyes on his task and hands ?

Copyright © 2006 Cambridge Center for Behavioral Studies

Is he being mindful of pinch points ?

Beginning observers are encouraged do Self Observations or Peer to Peer Observations. More advanced observers can observe up to 5 people at once.

All GATOR Observers have the Halliburton Company right to use Stop Work Authority- and shut down anything that they feel might cause bodily injury or death. Observers are encouraged to use SWA. This was confirmed at all levels of operations.

3. Coaching

Effective coaching puts quality control in the observation procedures and the data base. To become a coach, an employee must first be trained as an observer, second be nominated by his / her steering committee. Coach Training is a full day class.

The site reviewers reviewed the manuals used in observer and coaching training, as well as the process of observing and coaching.

The Coach Class Syllabus

- Health and Safety Moment
- Housekeeping
- +/Delta of the Observation Process.
- Why We Coach - PowerPoint presentation
- Use of Coaching Cards and Observation Checklist
- Coaching Exercise – Blindfolds-Trashcans- and Sugar Packets
- Comment Writing – Review and Critique
- Observation Review – actual observation paperwork that we will review.
- RHS Data entry overview familiarization – why we collect all the data and what we can do with it.
- A-B-C Analysis
- Action Planning overview and familiarization – what the steering committee does with all
- the data
- Coaching Manual Section 5 PowerPoint presentation
- Coaching Practical – Performing an actual coaching experience.
- Course +/Deltas
- Below are the roles and responsibilities for our coaches as defined by the GATOR Steering Committee

4. Coaching Roles and Responsibilities

- To set the example by performing quality observations.
- Support the needs of assigned observers
- To help increase the skill sets of assigned observers

Copyright © 2006 Cambridge Center for Behavioral Studies

- To communicate / develop / identify level three comments
- Give feedback to the GATOR Steering Committee
- To positively motivate observers
- To help with observer network meetings
- Critique observations for coaching opportunities
- Track assigned observers skill sets for improvement opportunities
- Attend steering committee meetings
- Contact assigned observers on a regular basis – at least monthly
- Perform one on one coaching opportunities

Below is a coaching form the steering committee developed as a minimum expectation for an observers skill set. It is used when performing one-on-one coaching.

5. Observation Skills: Coaching Guide

The Coach takes notes (no talking) while watching the Observer talk to the worker.

	YES	NO
INTRODUCTION:		
1. Observer explained how observation process works?	____	____
2. Observer explained & showed the Critical Behavior Checklist?	____	____
3. Observer mentions "no name, no blame"?	____	____
4. Observer explained a feedback session will occur.	____	____
FEEDBACK:		
5. Observer discussed "safes" first?	____	____
6. Observer avoided using igniter words?	____	____
7. Observer sought agreement on "at-risks"?	____	____
8. Observer asked worker for input on working safer?	____	____
9. Observer offered positive suggestions?	____	____
10. Observer promoted discussion by asking questions?	____	____
11. Observer avoids starting feedback with "you"?	____	____
12. Observer listened to answers – checked for understanding?	____	____
GENERAL:		
13. Observer treated the worker with respect?	____	____
14. Observer was positive in approach?	____	____
15. Observer avoided getting into an argument?	____	____

In addition to using this form the form below is used to capture coach feedback successes and developmental opportunities

Copyright © 2006 Cambridge Center for Behavioral Studies

Steering Committee members receive copies of coaching observations, and review them for further development needs of observers.

The site reviewers observed coaching in multiple worksites.

Copyright © 2006 Cambridge Center for Behavioral Studies

Workforce

The Oil and Gas Industry is a technologically driven as well as physically and mentally demanding. Some PSL's require through background checks due to explosive or radiation handling and DOT requirements. Each PSL has inherent risks associated with its services – High Pressure, Corrosive Fluids, Explosives, Radiation, etc.

The median age of the predominately male workforce is 42 years. Median ages by division are listed below.

Fluids Division: 46
Cement: 46
Baroid- 40
Completion and Reservoir Optimization Division – 40.
Sperry Sun – 41
Production Enhancement Division – 38
Logging and Perforating – 39
Integrated Solutions – 42
Security Drilling Bit Service – 44
ESG Management – Finance – IT – Business Development – Other PSL – 45

Safety Operations

The Behavior Based Process (BBP) began in the mid 1990's as a pilot program in California. At that time the Halliburton organization's safety programs principally used Job Safety Analysis (JSA), Hazard Observation Cards (HOC), Near Miss Reporting, TaPRoot analysis of incidents, and Smith Driving. However the company did not have a safety program to bring these tools together, to get beyond compliance driven safety. After 6 years of pilot efforts, the corporation began to implement BBP in the US.

The GOM began BBP in February, 2003. Before 2003, management had focused on one goal, communicating to employees that the existing at-risk practices did not need to occur – with proper job planning using Safety Huddles (pre-during-post job discussions), JSA, HOC, and the reporting of near misses as proactive data. Halliburton purchased the Smith Driving Program to teach employees (over 700 GOM company vehicles) about risk associated with driving, and to change driving behaviors.

The pre-BBP initiatives led to marked improvements in safety performance, but did not tie these tools together into a unified safety process. Safety performance reached a plateau. Then management focused on the Safety Big Three, 1) BBP, 2) Smith Driving, and 3) Safety Huddles.

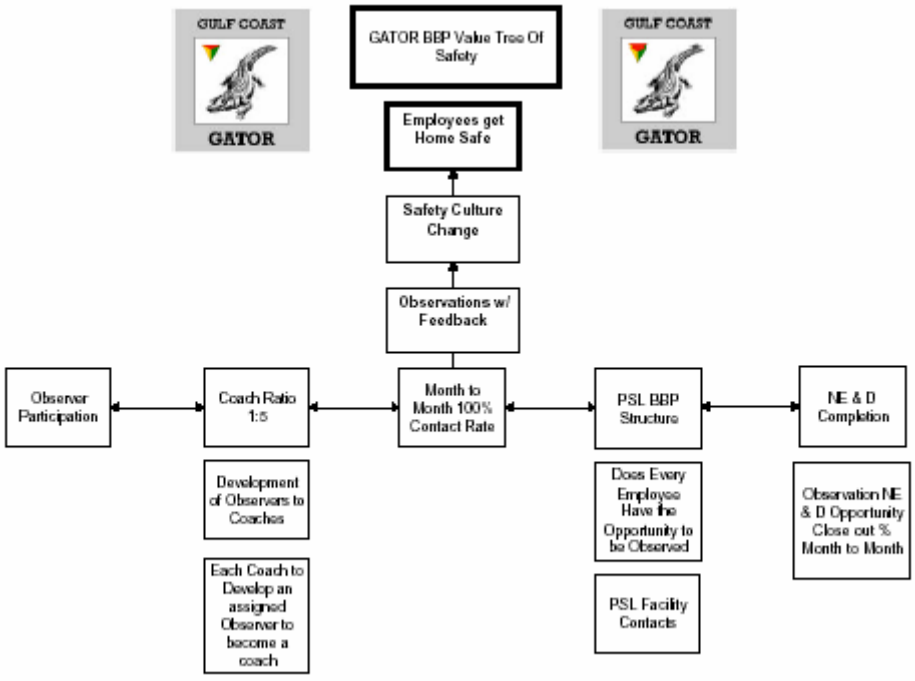
In Feb of 2003 the inaugural GATOR Steering Committee was formed and had this goal: to initiate a culture change in which employees saw the value in working safe and shared the goal of everyone going home safe. The new program engaged front line employees as well as supervisors and managers.

Copyright © 2006 Cambridge Center for Behavioral Studies

1. Behavioral Safety Data

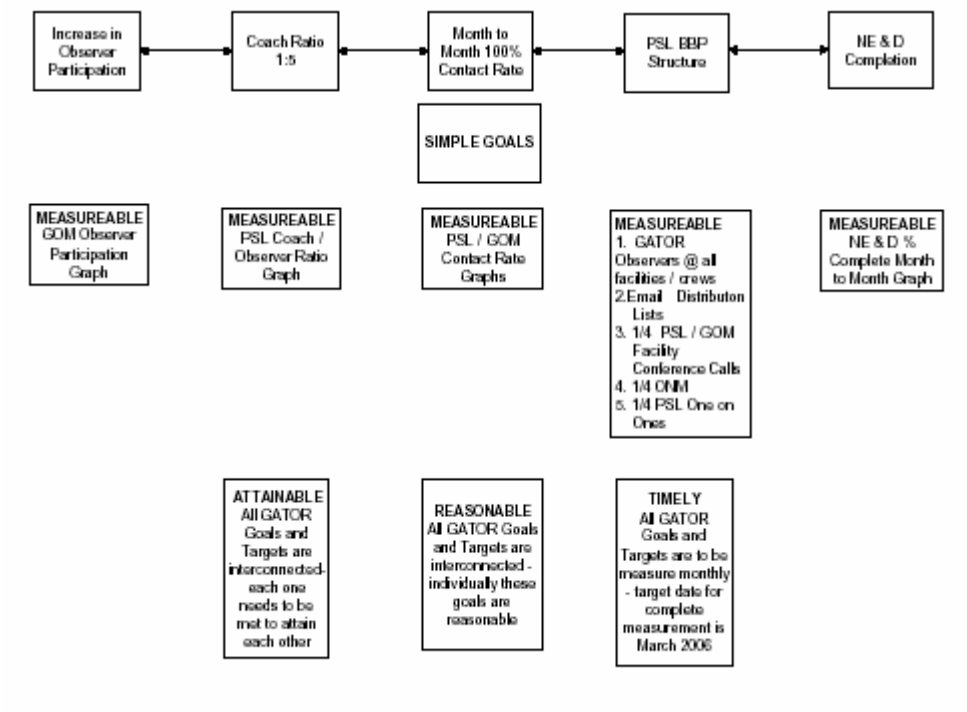
From February of 2003 forward, the Steering Committee developed, began to issue GATOR Alerts – communications based on data from Observations and Feedback and communicated to the entire GOM workforce. The first GATOR Alert in August of 2003 is reported to have quickly demonstrated its value. 181 observations captured during a four month time mirrored the number one incident for the entire year of 2002 – the at-risk behavior Line of Fire. GATOR BBP generated what in the past had taken a year of incidents and injuries to trend – and did it with only four months of observation data.

GATOR targets and goals are outlined in the chart, below.



This schematic guides decision making within the GATOR Steering Committee.

Copyright © 2006 Cambridge Center for Behavioral Studies



The SMART Method sets up measurement for goals and targets. S – Simple Goals, M – Measurable Goals, A-Attainable Goals, R-Reasonable Goals, T- Timely Goals.

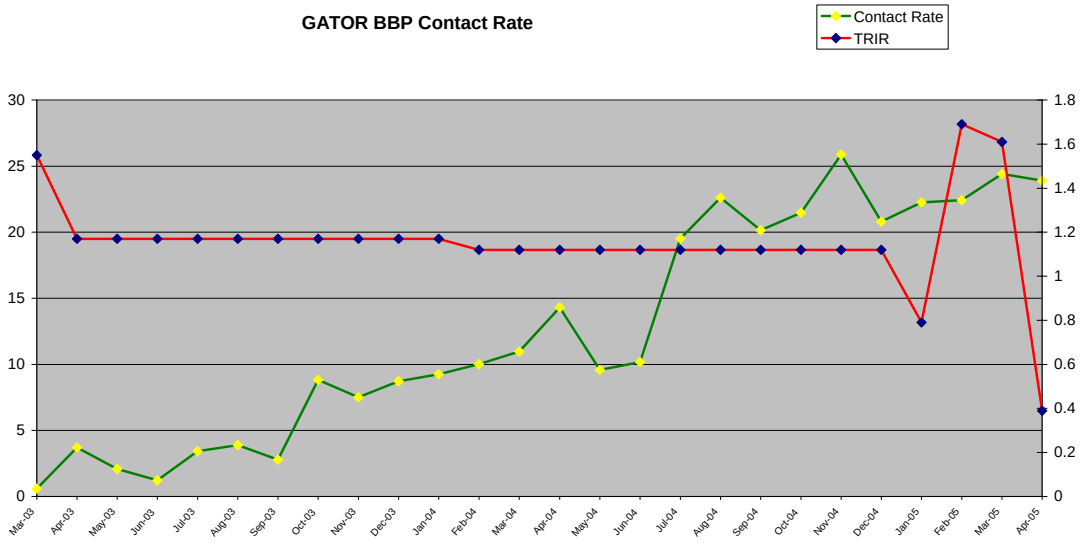
The GATOR program relies on its "tree of safety," below.

Contact Rate refers to the percentage of the employees whose safety behaviors are observed in a given time period. Calculation: the number of employees observed divided by the employee headcount for the location or PSL multiplied by 100. GOM treats Contact Rate as gauge of behavioral influence and potential culture change. Conceptually, the higher the contact rate, the quicker the culture change, a lower contact rate the longer culture change will take.

The data below reflect contact rates. Red line for 2002, 2003, and 2004 contains averages for the year ending Total Recordable and Reportable Incidents for GOM Operations. In

Copyright © 2006 Cambridge Center for Behavioral Studies

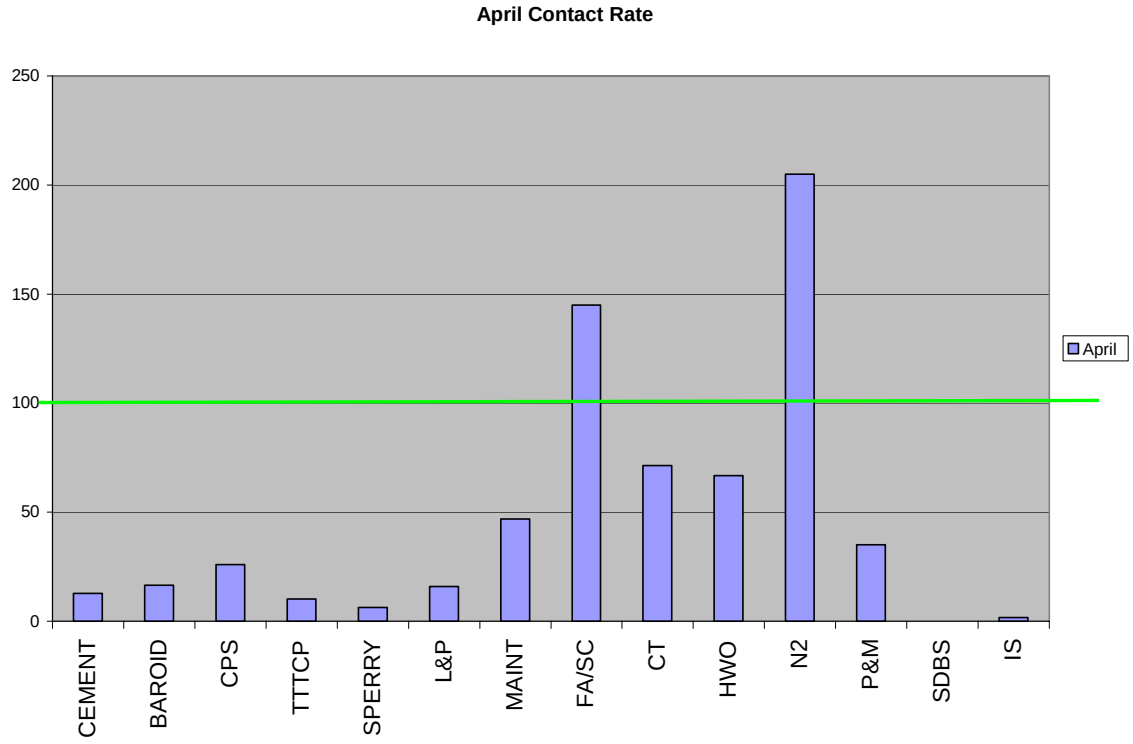
2005 the data reflect the month to month TRIR, the Green Line is the GATOR Contact Rate.



In April 2005 there were 2182 employees in the GOM; through the GATOR Process 523 or 23.89 % of the employees were observed.

PSL contact rates are tracked monthly, the green line is the target of 100% contact rate.

Copyright © 2006 Cambridge Center for Behavioral Studies



2. Non Enabled and Difficult Follow UP – NE&D

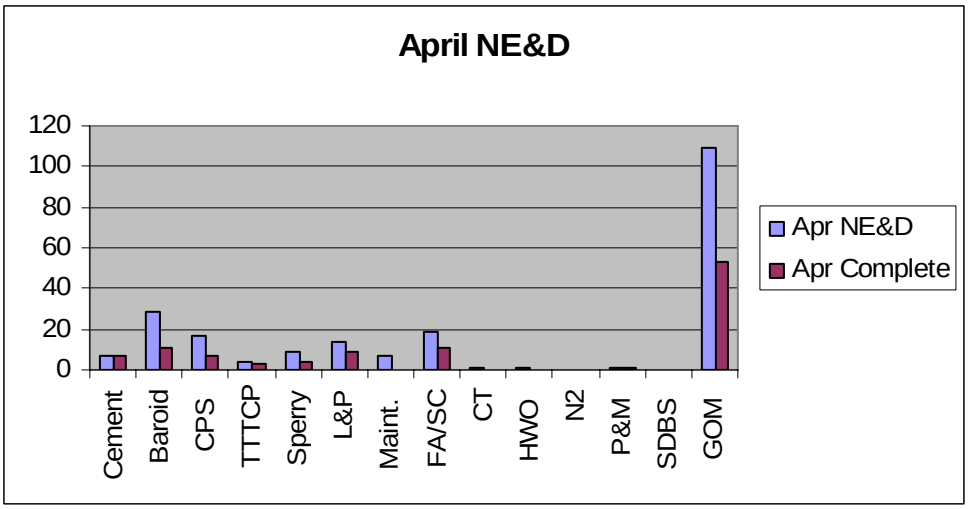
The GATOR Observation Process identifies the following types of at risk behaviors:

> **Enabled** – The employee is enabled to work safety by existing tools and procedures
> **Difficult** – The employee has difficulty working safe do to some deficiency in tools or procedures.
> **Non-Enabled** – The employee has no choice but to work at-risk, they need something to perform the job safety.

GATOR tracks the Non-Enabled and Difficult observations. If deficiencies are due to barriers present in the work environment, action plans involving re-engineering of work or new equipment occur after Steering Committee review.

The site reviewers observed in multiple work locations numerous changes in equipment and job / work flow design resulting from observations and Steering Committee recommendations.

Copyright © 2006 Cambridge Center for Behavioral Studies



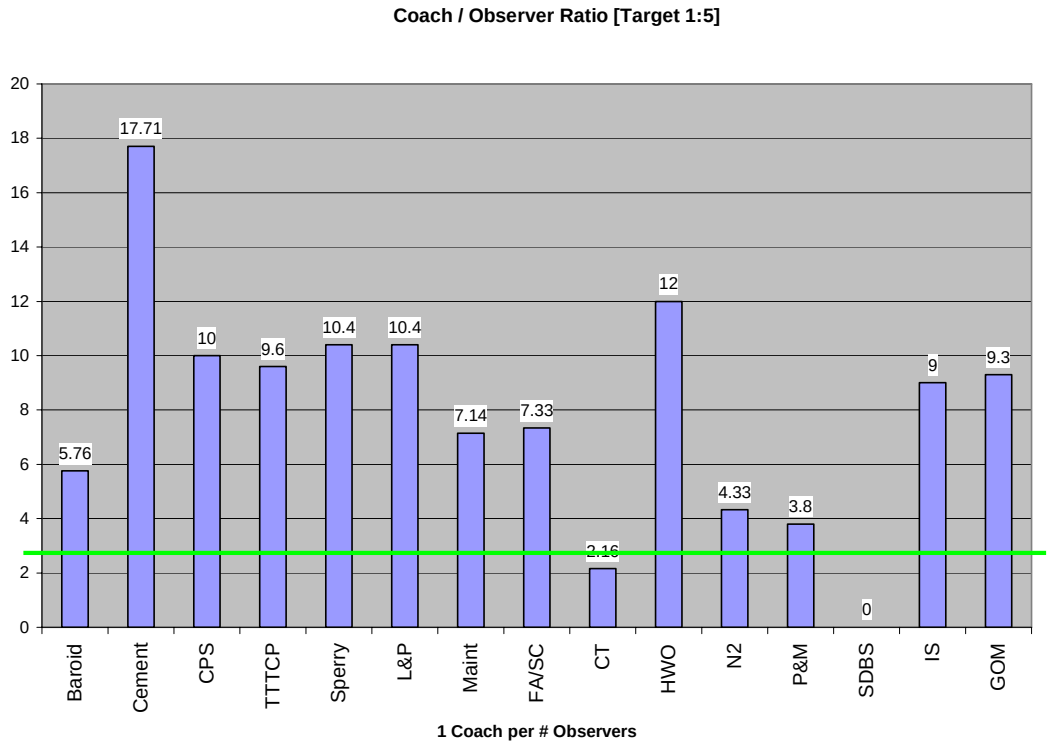
Once worksite, equipment, and job improvements take place, ("the NE&D is closed out"), the steering committee member responsible for the change completes a "win sheet", turns it in to the facilitator to catalog the win. The steering committee member then receives the sticker, below, to place on the improvement, for example a new piece of equipment.

The site review committee observed numerous stickers affixed to equipment and areas within work locations, changes growing out of the BBP.

Copyright © 2006 Cambridge Center for Behavioral Studies

3. Coach to Observer Ratio-

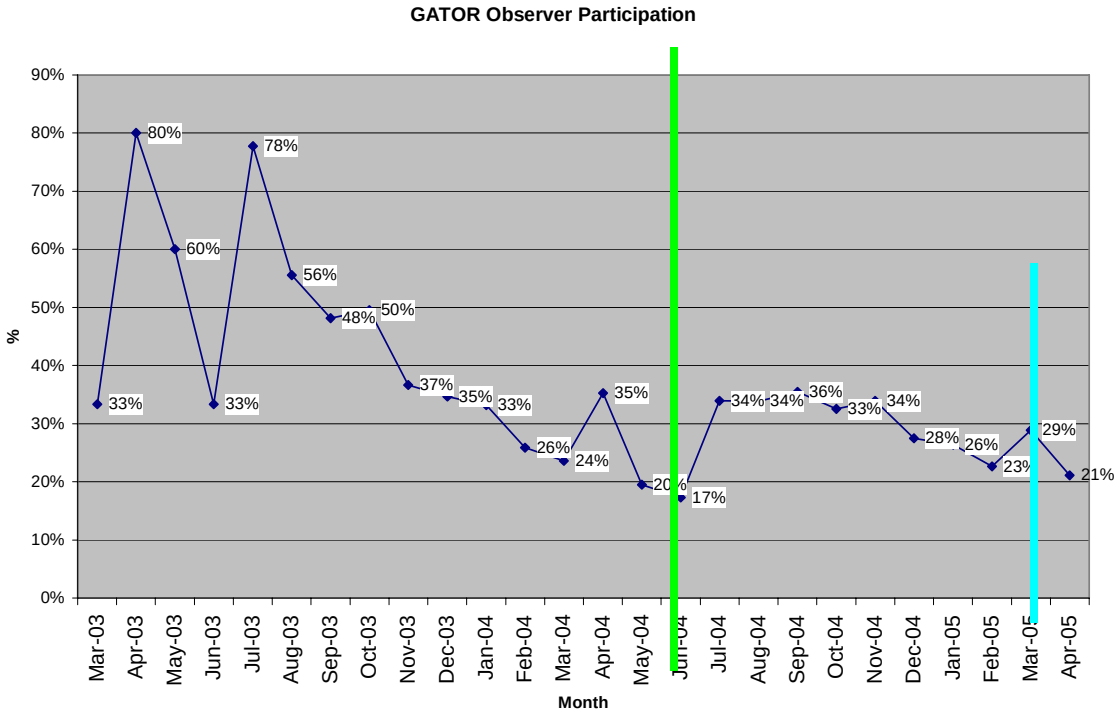
The GATOR goal is 1 coach for every 5 observers represented by the green line across the graph. The coach ratio is the number of trained observers divided by the number of trained coaches.



4. Observer Participation

Becoming a GATOR BBP observer is a voluntary process. The GATOR organization takes pride in observations generated through volunteer efforts rather than one mandated by managers.

Copyright © 2006 Cambridge Center for Behavioral Studies



Declining rates of observer participation led to a BBP Sustainability Review (the green vertical line, June, 2004) that recommended assignment of observers to trained coaches. Following implementation of this recommendation the decline stopped. Additional efforts will be needed to increase participation.

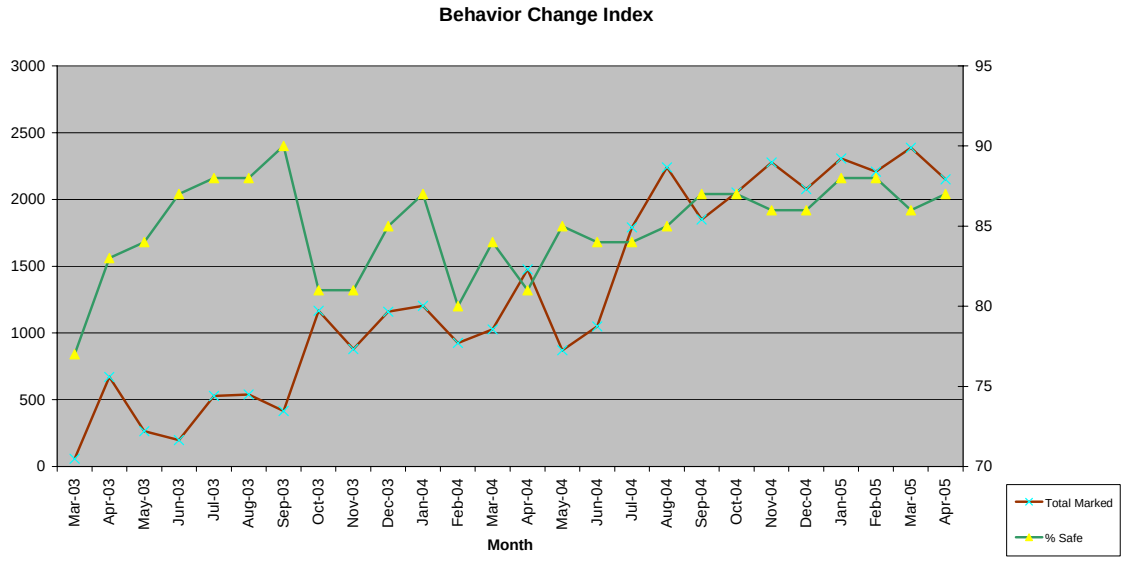
5. PSL BBP Structure

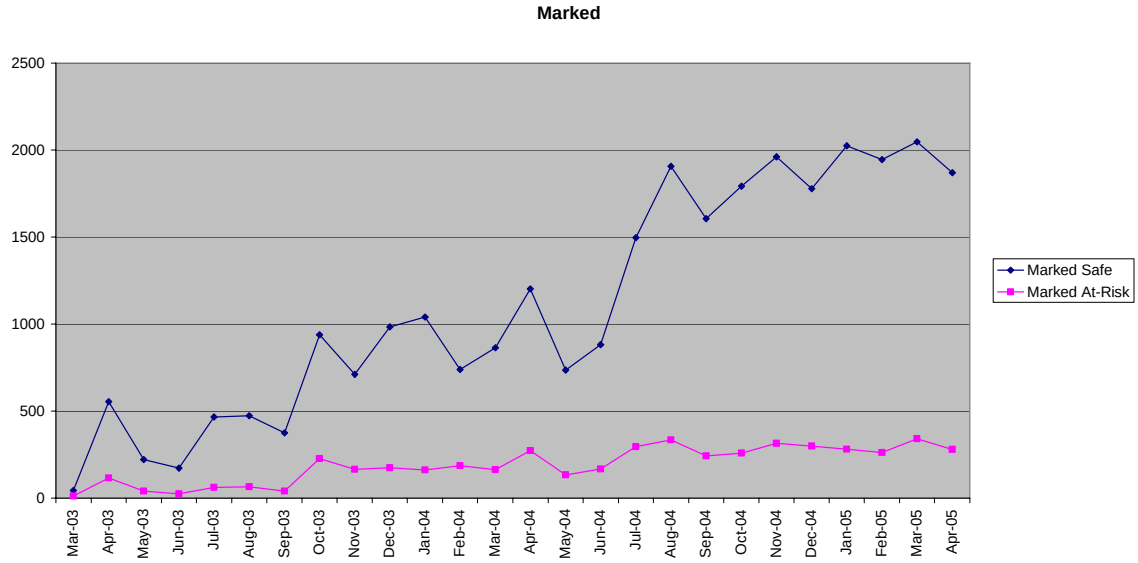
PSL's assign observers to coaches. Because many PSLs have multiple facilities, a monthly conference call is held with observers and the steering committee. In addition each PSL BBP tracks Observer Network Meetings in which observers meet to refresh their observation techniques, discuss difficulties or barriers to performing observations, as well as NE&D follow up and discuss behavior changes that may be occurring due to the observation process. PSL BBP also tracks one-on-ones in which a PSL Operations Manager, the PSL Steering Committee Member, and any other interested parties meet to discuss the barriers to implementing BBP in their PSL. Meetings are tracked in a spreadsheet.

6. Other Data

Additional graphs track % Safe observations, the total number of observations as and the % Safe.

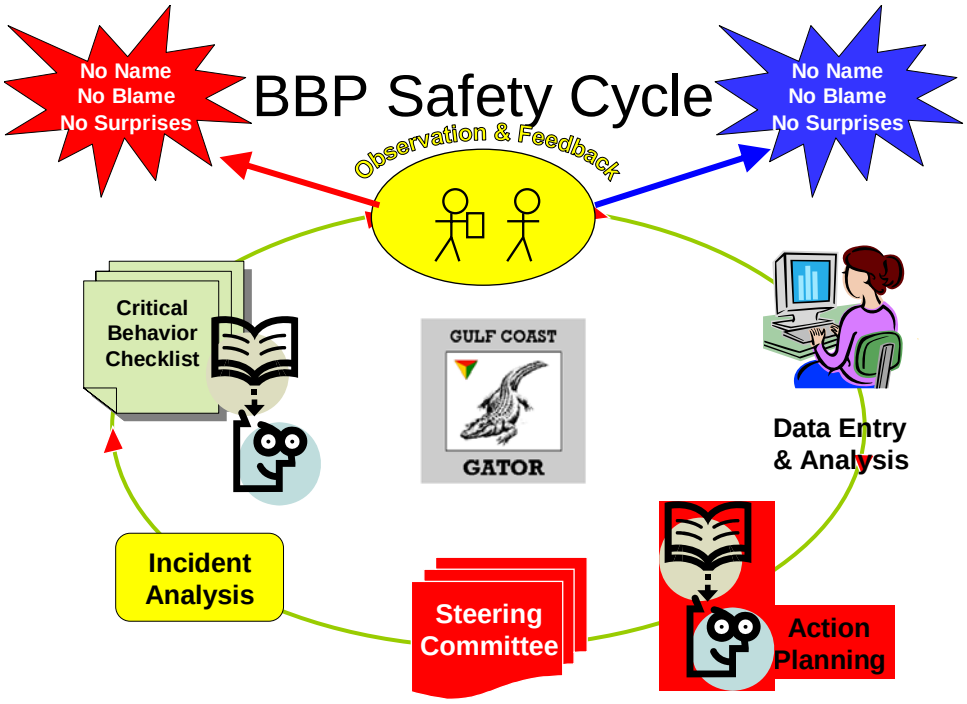
Copyright © 2006 Cambridge Center for Behavioral Studies





Copyright © 2006 Cambridge Center for Behavioral Studies

Description of the behavior-based safety program



1. Steering Committee

The steering committee (SC) is the decision making group for GATOR. All PSLs have at least one representative on the SC. A steering committee member serves 2 years. To be a voting member of the Steering Committee, a member must have completed the four learning requirements below.

1. Be a Trained Observer
2. Be a Trained Coach
3. In Depth use of ABC Analysis – taught in coach training
4. Be present during a Steering Committee Meeting where the GATOR's perform action planning on observation data.

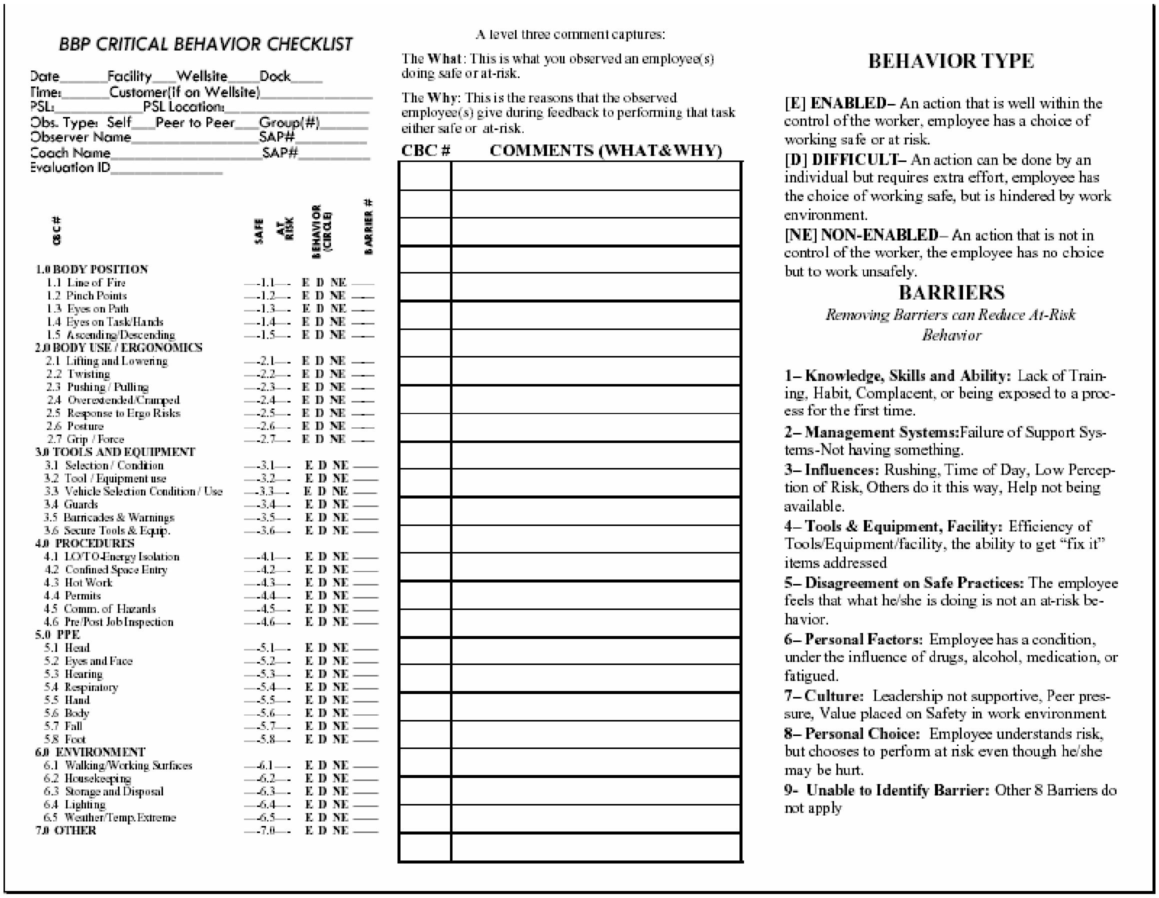
The steering committee is composed of about 50% Front Line Employees and 50% as close to front line – management as possible. There are three management sponsors of GATOR. They help implement process improvement decisions that arise our of observations. The Steering Committee meets once a month.

Incident Analysis- Each new SC reviews the previous two years of incidents and injuries using the internal database, RHS – Radian Health and Safety. The Inaugural Steering Committee 2003 reviewed incidents and injuries from 2001-2002, and the New (2005) Steering Committee reviewed incidents and injuries from 2003-2004. Each review leads to a revision of the critical behavior checklists (CBC). In addition to identifying new at-

Copyright © 2006 Cambridge Center for Behavioral Studies

risk behaviors, the revision helps the new SC build ownership of GATOR'S BBP program.

2. Critical Behavior Checklist



BBP CRITICAL BEHAVIOR CHECKLIST

Date______Facility___Wellsite____Dock____
Time:______Customer(If on Wellsite)______________
PSL:____________PSL Location:________________
Obs. Type: Self___Peer to Peer___Group(#)______
Observer Name_________________SAP#_________
Coach Name____________________SAP#_________
Evaluation ID______________

CBC #	SAFE / AT RISK	BEHAVIOR (CIRCLE)	BARRIER #
1.0 BODY POSITION			
1.1 Line of Fire	—1.1—	E D NE	—
1.2 Pinch Points	—1.2—	E D NE	—
1.3 Eyes on Path	—1.3—	E D NE	—
1.4 Eyes on Task/Hands	—1.4—	E D NE	—
1.5 Ascending/Descending	—1.5—	E D NE	—
2.0 BODY USE / ERGONOMICS			
2.1 Lifting and Lowering	—2.1—	E D NE	—
2.2 Twisting	—2.2—	E D NE	—
2.3 Pushing / Pulling	—2.3—	E D NE	—
2.4 Overextended/Cramped	—2.4—	E D NE	—
2.5 Response to Ergo Risks	—2.5—	E D NE	—
2.6 Posture	—2.6—	E D NE	—
2.7 Grip / Force	—2.7—	E D NE	—
3.0 TOOLS AND EQUIPMENT			
3.1 Selection / Condition	—3.1—	E D NE	—
3.2 Tool / Equipment use	—3.2—	E D NE	—
3.3 Vehicle Selection Condition / Use	—3.3—	E D NE	—
3.4 Guards	—3.4—	E D NE	—
3.5 Barricades & Warnings	—3.5—	E D NE	—
3.6 Secure Tools & Equip.	—3.6—	E D NE	—
4.0 PROCEDURES			
4.1 LO/TO-Energy Isolation	—4.1—	E D NE	—
4.2 Confined Space Entry	—4.2—	E D NE	—
4.3 Hot Work	—4.3—	E D NE	—
4.4 Permits	—4.4—	E D NE	—
4.5 Comm. of Hazards	—4.5—	E D NE	—
4.6 Pre/Post Job Inspection	—4.6—	E D NE	—
5.0 PPE			
5.1 Head	—5.1—	E D NE	—
5.2 Eyes and Face	—5.2—	E D NE	—
5.3 Hearing	—5.3—	E D NE	—
5.4 Respiratory	—5.4—	E D NE	—
5.5 Hand	—5.5—	E D NE	—
5.6 Body	—5.6—	E D NE	—
5.7 Fall	—5.7—	E D NE	—
5.8 Foot	—5.8—	E D NE	—
6.0 ENVIRONMENT			
6.1 Walking/Working Surfaces	—6.1—	E D NE	—
6.2 Housekeeping	—6.2—	E D NE	—
6.3 Storage and Disposal	—6.3—	E D NE	—
6.4 Lighting	—6.4—	E D NE	—
6.5 Weather/Temp.Extreme	—6.5—	E D NE	—
7.0 OTHER	—7.0—	E D NE	—

A level three comment captures:

The **What**: This is what you observed an employee(s) doing safe or at-risk.

The **Why**: This is the reasons that the observed employee(s) give during feedback to performing that task either safe or at-risk.

CBC #	COMMENTS (WHAT&WHY)

BEHAVIOR TYPE

[E] ENABLED– An action that is well within the control of the worker, employee has a choice of working safe or at risk.
[D] DIFFICULT– An action can be done by an individual but requires extra effort, employee has the choice of working safe, but is hindered by work environment.
[NE] NON-ENABLED– An action that is not in control of the worker, the employee has no choice but to work unsafely.

BARRIERS

Removing Barriers can Reduce At-Risk Behavior

1– Knowledge, Skills and Ability: Lack of Training, Habit, Complacent, or being exposed to a process for the first time.
2– Management Systems: Failure of Support Systems-Not having something.
3– Influences: Rushing, Time of Day, Low Perception of Risk, Others do it this way, Help not being available.
4– Tools & Equipment, Facility: Efficiency of Tools/Equipment/facility, the ability to get "fix it" items addressed
5– Disagreement on Safe Practices: The employee feels that what he/she is doing is not an at-risk behavior.
6– Personal Factors: Employee has a condition, under the influence of drugs, alcohol, medication, or fatigued.
7– Culture: Leadership not supportive, Peer pressure, Value placed on Safety in work environment.
8– Personal Choice: Employee understands risk, but chooses to perform at risk even though he/she may be hurt.
9- Unable to Identify Barrier: Other 8 Barriers do not apply

This is an example of our CBC that was generated from incidents 2001-2002 by the inaugural steering committee, used by our GATOR Observers from Feb 2003 to Feb 2005. This focus's our observation and feedback potential on the 94% causal at-risk behaviors of incidents and injuries – a very powerful tool to change at-risk behavior to safe through observations.

Copyright © 2006 Cambridge Center for Behavioral Studies

BBP CRITICAL BEHAVIOR CHECKLIST

Date_____ Facility ☐ Wellsite ☐ Dock ☐ Driving ☐
Time______ Customer (if on Wellsite)________________
PSL:____________ PSL Location:________________
Self ☐ Peer to Peer ☐ Group #________________
Observer Name________________ SAP#__________
Coach Name__________________ SAP#__________

CBC #	SAFE AT RISK	BEHAVIOR (CIRCLE)	BARRIER #
1.0 BODY POSITION			
1.1 Line of Fire	—1.1—	E D NE	——
1.2 Pinch Points	—1.2—	E D NE	——
1.3 Eyes on Path	—1.3—	E D NE	——
1.4 Eyes on Task/Hands	—1.4—	E D NE	——
1.5 Ascending/Descending	—1.5—	E D NE	——
2.0 BODY USE / ERGONOMICS			
2.1 Lifting and Lowering	—2.1—	E D NE	——
2.2 Twisting	—2.2—	E D NE	——
2.3 Pushing / Pulling	—2.3—	E D NE	——
2.4 Overextended/Cramped	—2.4—	E D NE	——
2.5 Response to Ergo Risks	—2.5—	E D NE	——
2.6 Posture	—2.6—	E D NE	——
2.7 Grip / Force	—2.7—	E D NE	——
3.0 TOOLS AND EQUIPMENT			
3.1 Selection / Condition	—3.1—	E D NE	——
3.2 Tool / Equipment use	—3.2—	E D NE	——
3.3 Vehicle Selection Condition / Use	—3.3—	E D NE	——
3.4 Guards	—3.4—	E D NE	——
3.5 Barricades & Warnings	—3.5—	E D NE	——
3.6 Secure Tools & Equip.	—3.6—	E D NE	——
4.0 PROCEDURES			
4.1 LO/TO-Energy Isolation	—4.1—	E D NE	——
4.2 Confined Space Entry	—4.2—	E D NE	——
4.3 Hot Work	—4.3—	E D NE	——
4.4 Permits	—4.4—	E D NE	——
4.5 Comm. of Hazards	—4.5—	E D NE	——
4.6 Pre/Post Job Inspection	—4.6—	E D NE	——
5.0 PPE			
5.1 Head	—5.1—	E D NE	——
5.2 Eyes and Face	—5.2—	E D NE	——
5.3 Hearing	—5.3—	E D NE	——
5.4 Respiratory	—5.4—	E D NE	——
5.5 Hand	—5.5—	E D NE	——
5.6 Body	—5.6—	E D NE	——
5.7 Fall	—5.7—	E D NE	——
5.8 Foot	—5.8—	E D NE	——
6.0 WORKING ENVIRONMENT			
6.1 Walking/Working Surfaces	—6.1—	E D NE	——
6.2 Housekeeping	—6.2—	E D NE	——
6.3 Storage and Disposal	—6.3—	E D NE	——
6.4 Lighting	—6.4—	E D NE	——
6.5 Weather/Temp. Extreme	—6.5—	E D NE	——
7.0 ENVIRONMENTAL			
7.1 Equipment Inspection	—7.1—	E D NE	——
7.2 Monitoring	__7.2__	E D NE	____
7.3 Containment Measures	__7.3__	E D NE	____
7.4 Emergency Response	__7.4__	E D NE	____
8.0 SMITH DRIVING KEYS®			
8.1 Aim High in Steering	__8.1__	E D NE	____
8.2 Get the Big Picture	__8.2__	E D NE	____
8.3 Keep Your Eyes Moving	__8.3__	E D NE	____
8.4 Leave Yourself an Out	__8.4__	E D NE	____
8.5 Make Sure They See You	__8.5__	E D NE	____
9.0 OTHER	__9.0__	E D NE	____

A level three comment captures:

The **What**: This is what you observed an employee(s) doing safe or at-risk.

The **Why**: This is the reasons that the observed employee(s) give during feedback to performing that task either safe or at-risk.

CBC #	COMMENTS (WHAT&WHY)

BEHAVIOR TYPE

[E] ENABLED– An action that is well within the control of the worker, employee has a choice of working safe or at risk.

[D] DIFFICULT– An action can be done by an individual but requires extra effort, employee has the choice of working safe, but is hindered by work environment.

[NE] NON-ENABLED– An action that is not in control of the worker, the employee has no choice but to work unsafely.

BARRIERS

Removing Barriers can Reduce At-Risk Behavior

1– Knowledge, Skills and Ability: Lack of Training, Habit, Complacent, or being exposed to a process for the first time.

2– Management Systems: Failure of Support Systems-Not having something.

3– Influences: Rushing, Time of Day, Low Perception of Risk, Others do it this way, Help not being available.

4– Tools & Equipment, Facility: Efficiency of Tools/Equipment/facility, the ability to get "fix it" items addressed

5– Disagreement on Safe Practices: The employee feels that what he/she is doing is not an at-risk behavior.

6– Personal Factors: Employee has a condition, under the influence of drugs, alcohol, medication, or fatigued.

7– Culture: Leadership not supportive, Peer pressure, Value placed on Safety in work environment.

8– Personal Choice: Employee understands risk, but chooses to perform at risk even though he/she may be hurt.

9- Unable to Identify Barrier: Other 8 Barriers do not apply

The current CBC was developed by the new steering committee in Feb 2005. Environmental behaviors were added, as were driving observations using the Five Keys to Smith Driving.

The CBC is contained on one page and is also available in a tally book format. A tally book is a 3.5 x 8 inch notebook; its named came from the practice among oil field workers of keeping a tally of the drill pipe that run into an oil well. Most oil field workers carry a tally book in their back pocket. There is also a four page electronic version of the CBC that an observer can complete, save to email, then send to a coach or steering committee member for review and entry into the database.

3. Safe and At-Risk Behavior Determination – Incident Investigation

The site reviewers sampled and reviewed incident investigation reports. Reports and investigations are in order, and were confirmed with members of management.

The SC reviews every incident over the previous two years and ties behavioral causes to the incident. Below is an example, a First Aid incident.

Copyright © 2006 Cambridge Center for Behavioral Studies

INCIDENT NUMBER: xxxxxx
INCI**DENT DESCRIPTION:** Small cut to palm of hand.

BUSINESS UNIT: Xxxxxx Group
PRODUCT LINE: Completion Tools
COST CENTER NUMBER: xxxxxxxx
COST CENTER DESCRIPTION: Xxxx, Xx.

INCIDENT TYPE: Injury / Illness Incident
VEHICLE REPORTABLE CLASS:
INJURY RECORDABLE: First Aid Case
NEAR MISS: NO

GEOGRAPHIC UNIT: Xxxxxx Parish, Louisiana, USA
SITE NAME: Xxxxxx

LOCATION TYPE: Offshore Platform
LOCATION DESCRIPTION: Xxxx, Xxxx

OCCURRENCE DATE: 05/10/2005
OCCURRENCE TIME: 11:00 AM

CUSTOMER: Xxxx, Inc.
ENTERED BY: Xxxxxx
SUPERVISOR OF WORK ACTIVITY: Xxxxxxx

RADIATION/EXPLOSIVES INVOLVED: NO

INCIDENT DETAIL DESCRIPTION: Employee states he was attaching .092 wire to a wire scratcher and the wire slipped and penetrated through his glove and punctured the palm of his right hand. The employee was treated with first aid on location and returned to work.

Injuries and investigations are reported to employees in an Incident Newsletter that ties behaviors to incidents and injuries for all incidents that go through TapRoot.

Copyright © 2006 Cambridge Center for Behavioral Studies

4. Observation Process

GATOR observation is a voluntary process, not mandated by management, thus avoiding compliance due to threats or punishment for lack of participation. There is a strict No Name, No Blame, No Surprises Philosophy for GATOR. Observations are anonymous and confidential. Observers do not blame a fellow co-worker for working at risk.

A valid GATOR observation requires two key components, an introduction by the observer declaring the purpose of the visit, and feedback immediately afterwards with the employee(s) observed.

The site reviewers observed peer-to-peer observations in progress.

There are four types of observations in GATOR,

> **Self Observation** –an employee observes the behaviors they exhibit while performing operations,
> **Peer to Peer Observation** – one employee observes another employee,.
> **Group Observations** – a skilled observer observes up to 5 employees at a time,
> **3rd Party Observations** –a new form of observation, two months old, that opens observation to contractors and customers; any person that assisting in accomplishing a task. For example, if a customer's employee on a rig assists on a customers location, they can now be included them in the GATOR observation process, and offered feedback.

Observations occur in four settings,

> **Facility** – a Halliburton facility, usually shop or office,
> **Wellsite** – at a customers location,
> **Dockside** – docksides along the Gulf of Mexico,
> **Driving** – an observation on an employee while driving (using Smith Driving's 5 keys).

GATOR Observers introduces themselves and then ask if the person has been observed before. If not, the observer shows the CBC to the person, explains the no-name feature of the process, assures the person that the observation data collected will not go to their manager, and then asks permission to observe the employee. Employees have to right to turn down being observed, though not to turn down every opportunity to be observed. Feedback usually begins after 15 minutes of observing. The GATOR observer initially gives specific feedback re everything that has been observed as safe, then transitions into the feedback for at-risk behaviors. The latter is aimed at understanding why the employee performed the behavior at-risk, identification of barriers to safe behaviors, and opportunities that arise out of the observation. When completed, the observer thanks the employee for the opportunity to perform the observations. Completed observations are

Copyright © 2006 Cambridge Center for Behavioral Studies

given to appropriate coaches or steering committee members for quality control and entry into the observation database.

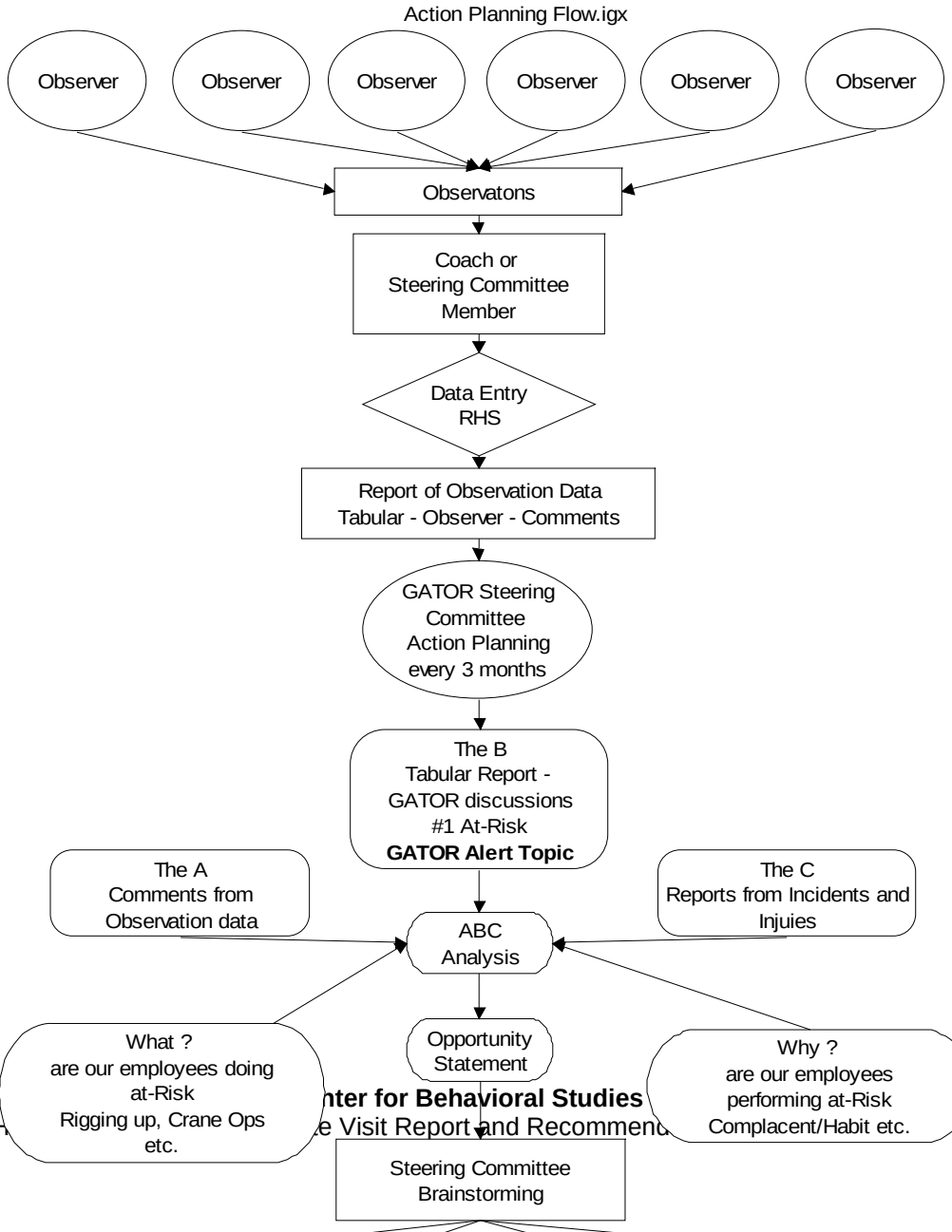
5. Data Entry-

All Observations are reviewed for coaching opportunities prior to being entered into the database. Observations are entered into a Halliburton Database – RHS – Radian Health and Safety. Data Entry takes 5-15 minutes per observation and we are currently pursuing any available means to alleviate data entry burden.

The site reviewers examined observation data, the data base, and sampled safety data observations data.

6. Action Planning

The GATOR SC performs action planning on observation data once a quarter.



Step 1: Review The Tabular Report for the quarter – any member can request that a CBC behavior be considered for action planning. Usually there are 5-7 CBC's that the GATOR's suggest to perform action planning on.

Step 2: Data Validation – assess observation data to support action planning.

Step 3: Additional CBC's are reviewed for Incidents and Injuries- these incidents and injuries correspond to the same time period for the observation data and come from the RHS database for incidents and injuries.

Step 4: Assess CBC's remaining after step 3

Step 5: GATOR Open Discussion on all CBC's – during this step the one CBC is chosen for the GATOR Alert.

Step 6: ABC Analysis on the CBC.

Step 7: The Opportunity Statement is developed – the reasons for the GATOR Alert – where the data came from – goals and targets for the alert – the time frame the data – where/ what the at-risks were performed.

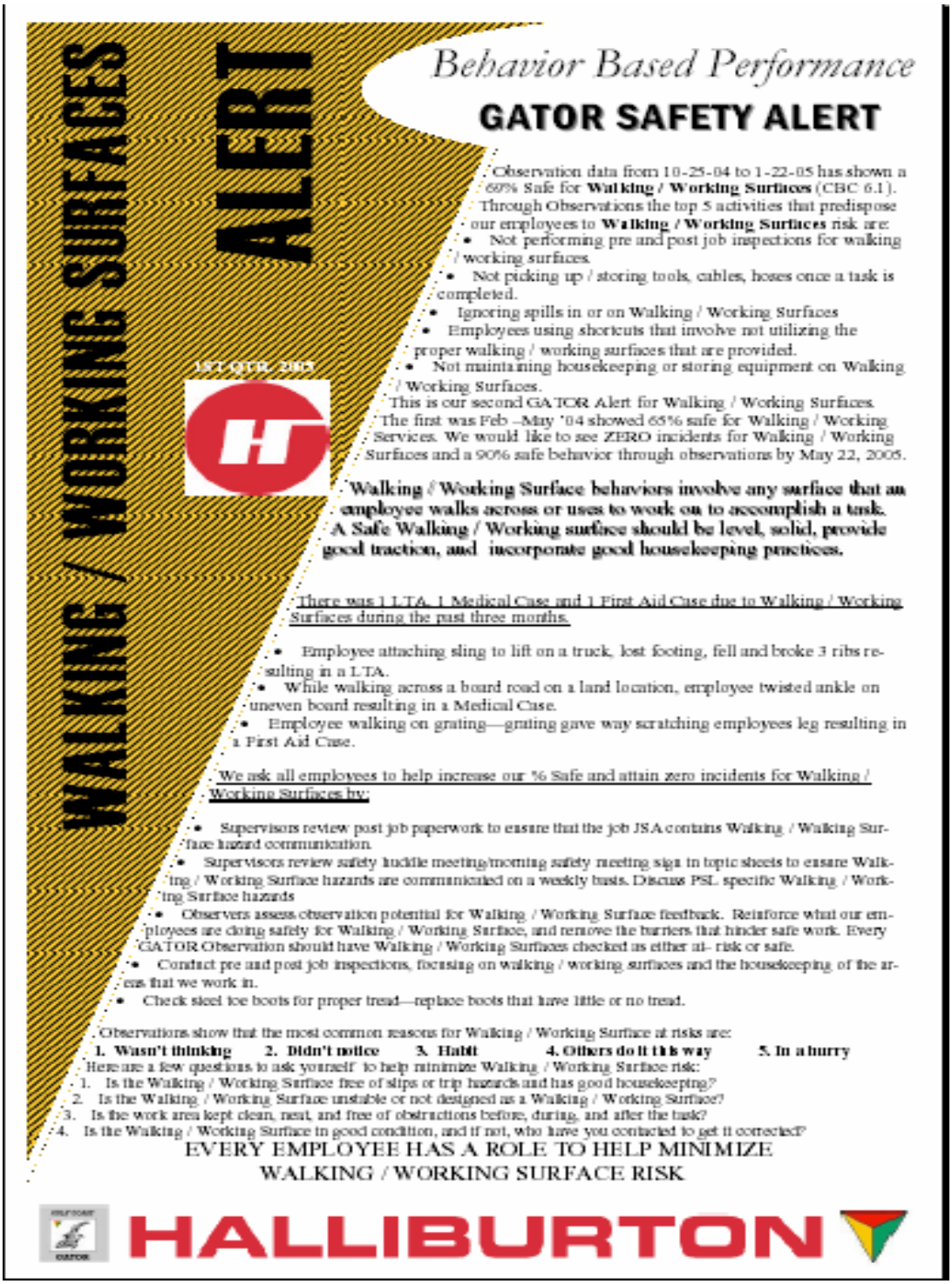
Step 8: Brain-storming – generate ideas re changing at-risk to a safe behavior.

Step 9: Each GATOR Gets 10 "dollars" to spend on the ideas – they can spend all 10 on one idea or split their 10 across several ideas.

Step 10: Formation of Teams (voluntary)– the GATOR Alert Team, called the Execution Team, moves from the opportunity statement and observation data to the process improvement initiative recommended to the GOM Leadership Team. At any given time, there are usually several Implementation Teams. Once the Execution and Implementation Teams' work is voted on by the GATOR Committee, it is distributed as an action item to The entire GOM or the PII H&S Core Team.

Below is an example of a GATOR Alert for Walking and Working Surfaces.

Copyright © 2006 Cambridge Center for Behavioral Studies



WALKING / WORKING SURFACES ALERT

1ST QTR. 2005

Behavior Based Performance

GATOR SAFETY ALERT

Observation data from 10-25-04 to 1-22-05 has shown a 60% Safe for **Walking / Working Surfaces** (CBC 6.1). Through Observations the top 5 activities that predispose our employees to **Walking / Working Surfaces** risk are:

- Not performing pre and post job inspections for walking / working surfaces.
- Not picking up / storing tools, cables, hoses once a task is completed.
- Ignoring spills in or on Walking / Working Surfaces
- Employees using shortcuts that involve not utilizing the proper walking / working surfaces that are provided.
- Not maintaining housekeeping or storing equipment on Walking / Working Surfaces.

This is our second GATOR Alert for Walking / Working Surfaces. The first was Feb –May '04 showed 65% safe for Walking / Working Services. We would like to see ZERO incidents for Walking / Working Surfaces and a 90% safe behavior through observations by May 22, 2005.

Walking / Working Surface behaviors involve any surface that an employee walks across or uses to work on to accomplish a task. A Safe Walking / Working surface should be level, solid, provide good traction, and incorporate good housekeeping practices.

There was 1 LTA, 1 Medical Case and 1 First Aid Case due to Walking / Working Surfaces during the past three months.

- Employee attaching sling to lift on a truck, lost footing, fell and broke 3 ribs resulting in a LTA.
- While walking across a board road on a land location, employee twisted ankle on uneven board resulting in a Medical Case.
- Employee walking on grating—grating gave way scratching employees leg resulting in a First Aid Case.

We ask all employees to help increase our % Safe and attain zero incidents for Walking / Working Surfaces by:

- Supervisors review post job paperwork to ensure that the job JSA contains Walking / Walking Surface hazard communication.
- Supervisors review safety huddle meeting/morning safety meeting sign in topic sheets to ensure Walking / Working Surface hazards are communicated on a weekly basis. Discuss PSL specific Walking / Working Surface hazards
- Observers assess observation potential for Walking / Working Surface feedback. Reinforce what our employees are doing safely for Walking / Working Surface, and remove the barriers that hinder safe work. Every GATOR Observation should have Walking / Working Surfaces checked as either at- risk or safe.
- Conduct pre and post job inspections, focusing on walking / working surfaces and the housekeeping of the areas that we work in.
- Check steel toe boots for proper tread—replace boots that have little or no tread.

Observations show that the most common reasons for Walking / Working Surface at risks are:

1. Wasn't thinking **2. Didn't notice** **3. Habit** **4. Others do it this way** **5. In a hurry**

Here are a few questions to ask yourself to help minimize Walking / Working Surface risk:

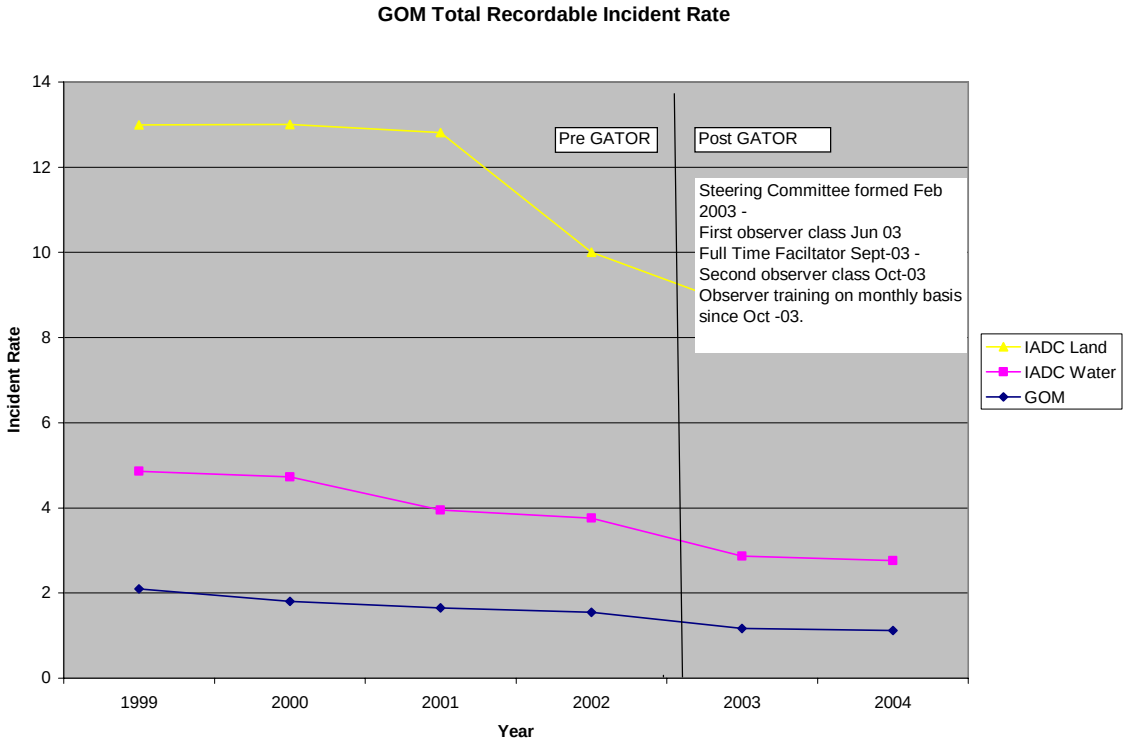
1. Is the Walking / Working Surface free of slips or trip hazards and has good housekeeping?
2. Is the Walking / Working Surface unstable or not designed as a Walking / Working Surface?
3. Is the work area kept clean, neat, and free of obstructions before, during, and after the task?
4. Is the Walking / Working Surface in good condition, and if not, who have you contacted to get it corrected?

EVERY EMPLOYEE HAS A ROLE TO HELP MINIMIZE WALKING / WORKING SURFACE RISK

HALLIBURTON

7. Graphic Displays of Incident Data

The graphs below contain incident data by PSL from 1999 to Jan 2005. GOM incident data is compared to an industry standard IADC – International Association of Drilling Contractors. IADC breaks down data into Land (yellow) and Water (pink)

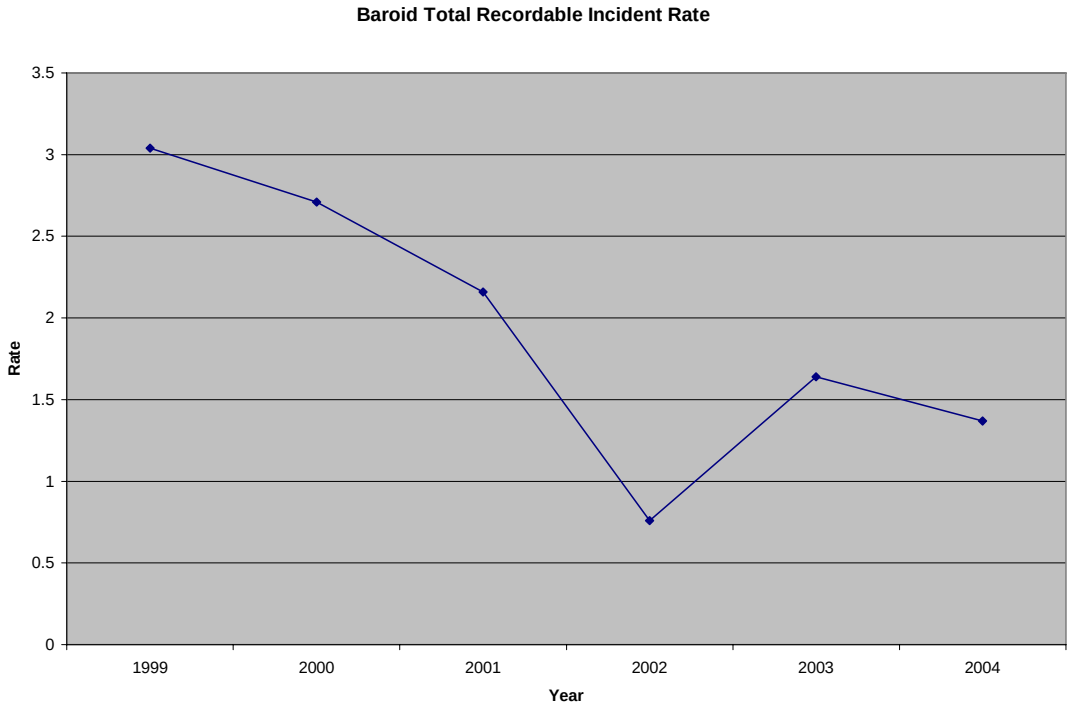


Copyright © 2006 Cambridge Center for Behavioral Studies

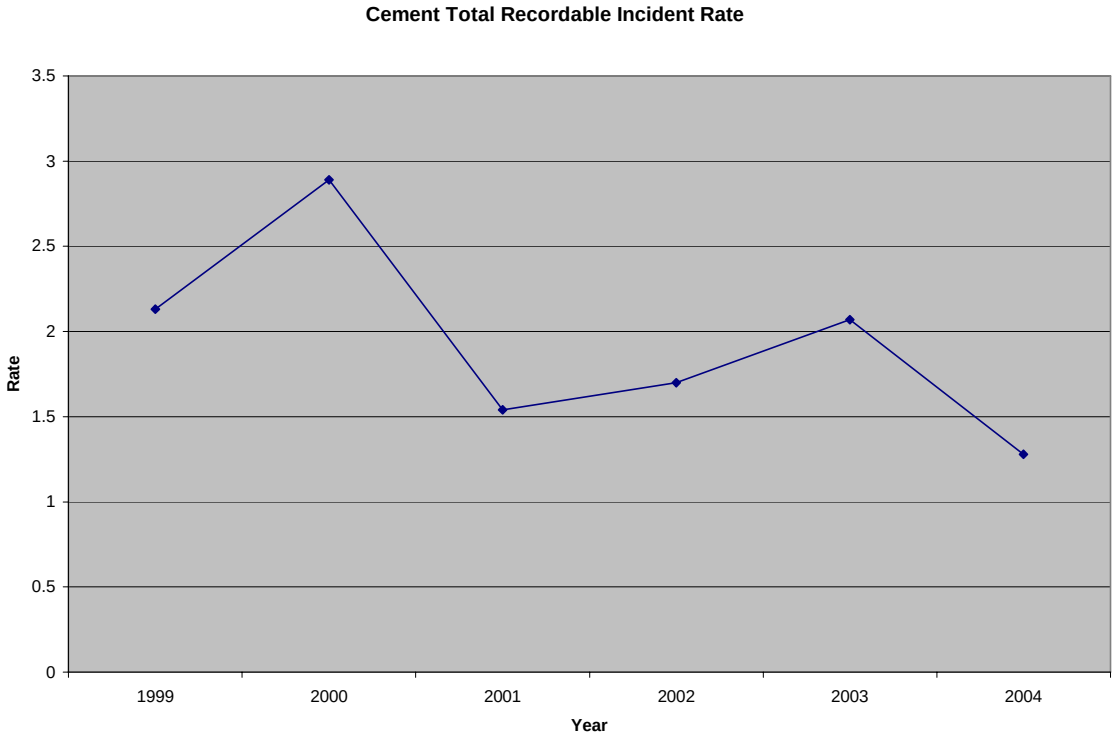
The incident rate data is taken from the Bureau of Labor statistics year 1999-2002 SIC Code 138, 2003 NACIS code 21. Data presented for 2004 under BLS data is the same as 2003 due to numbers not being available for the year 2004. The data to the left of the green line is pre-GATOR, to the right is post-GATOR program.

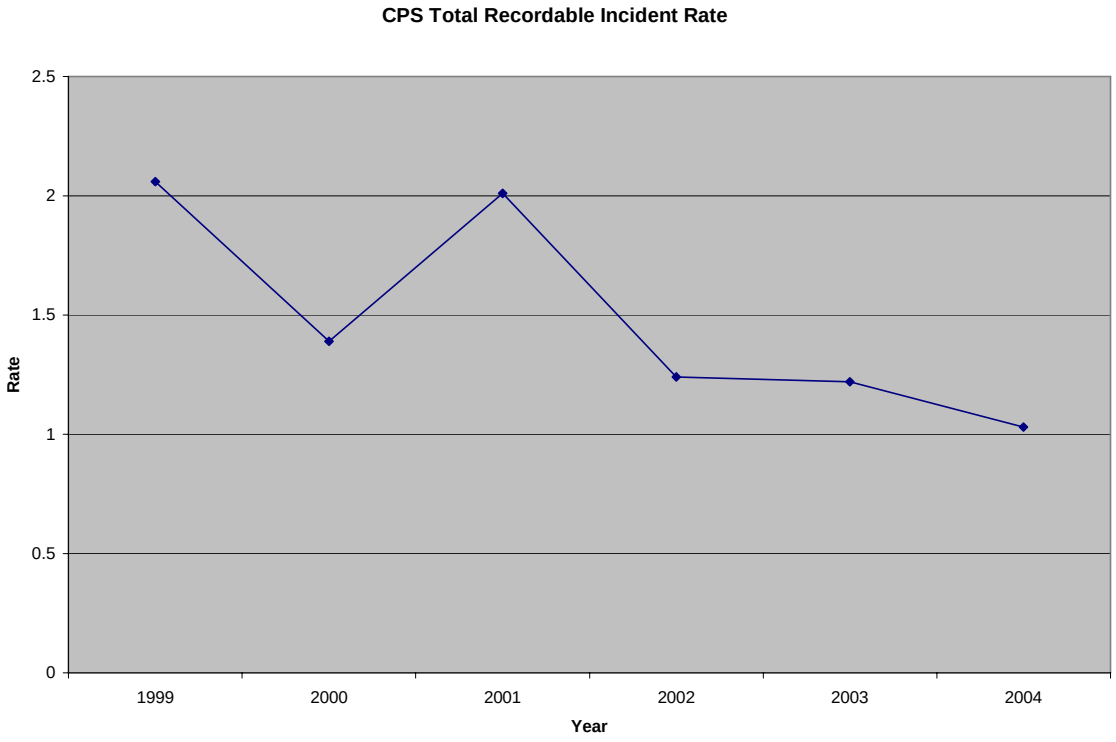
During the site visit the site reviewers viewed injury incident rates comparing GOM to other Halliburton USA regions' safety performance. GOM consistently performed work with lower incident rates than other Halliburton regions of the USA.

(insert graphs)

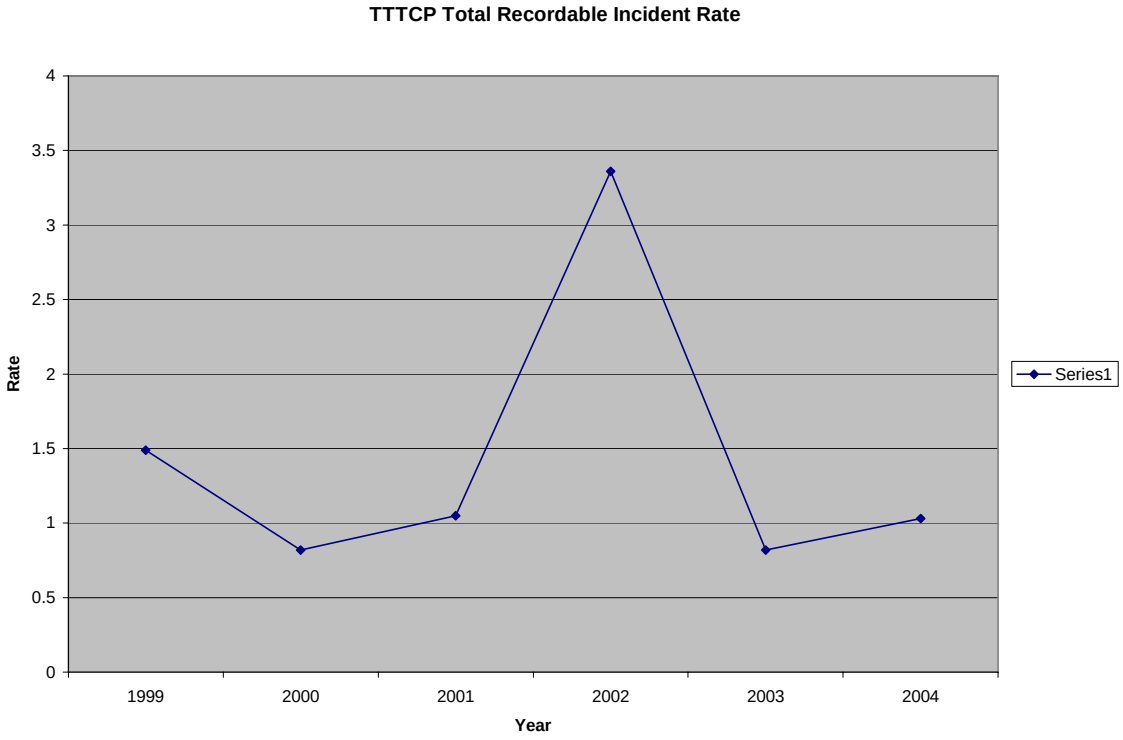


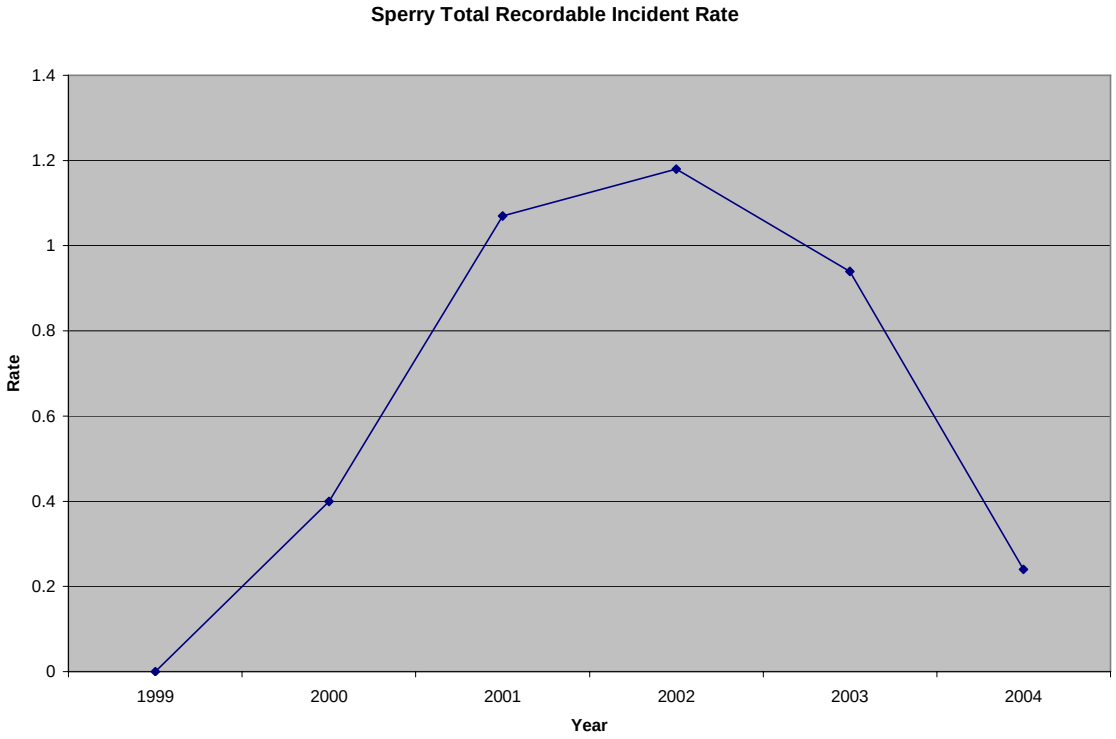
Copyright © 2006 Cambridge Center for Behavioral Studies





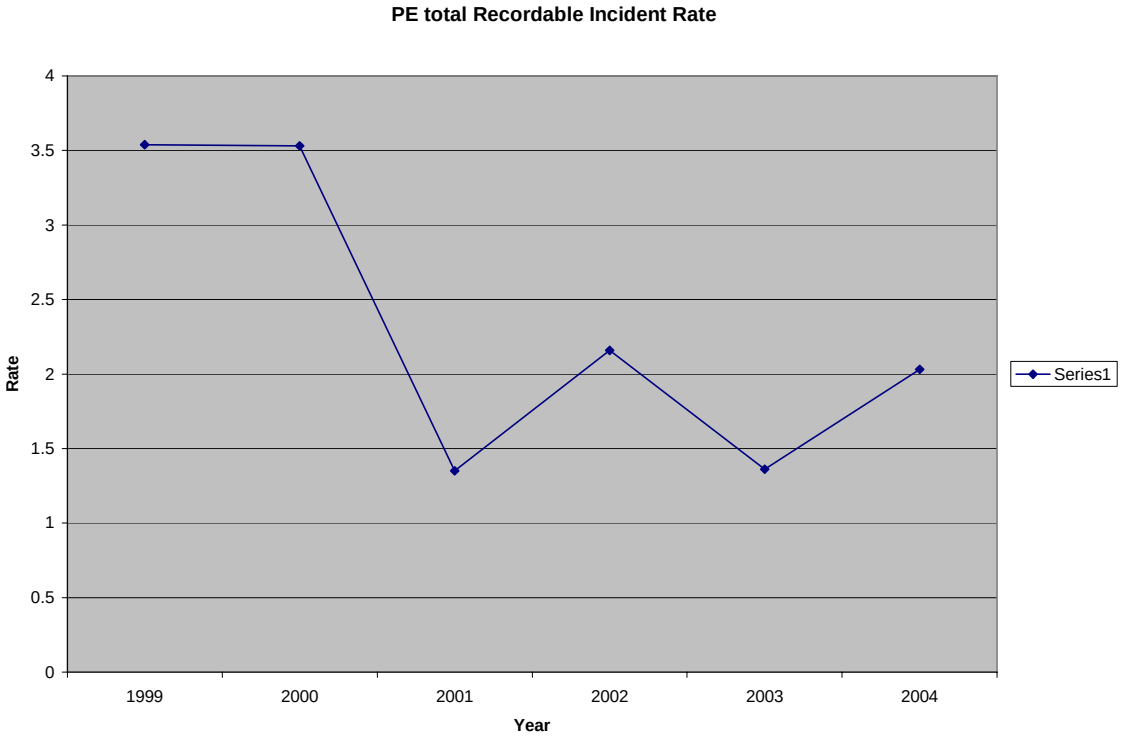
Copyright © 2006 Cambridge Center for Behavioral Studies

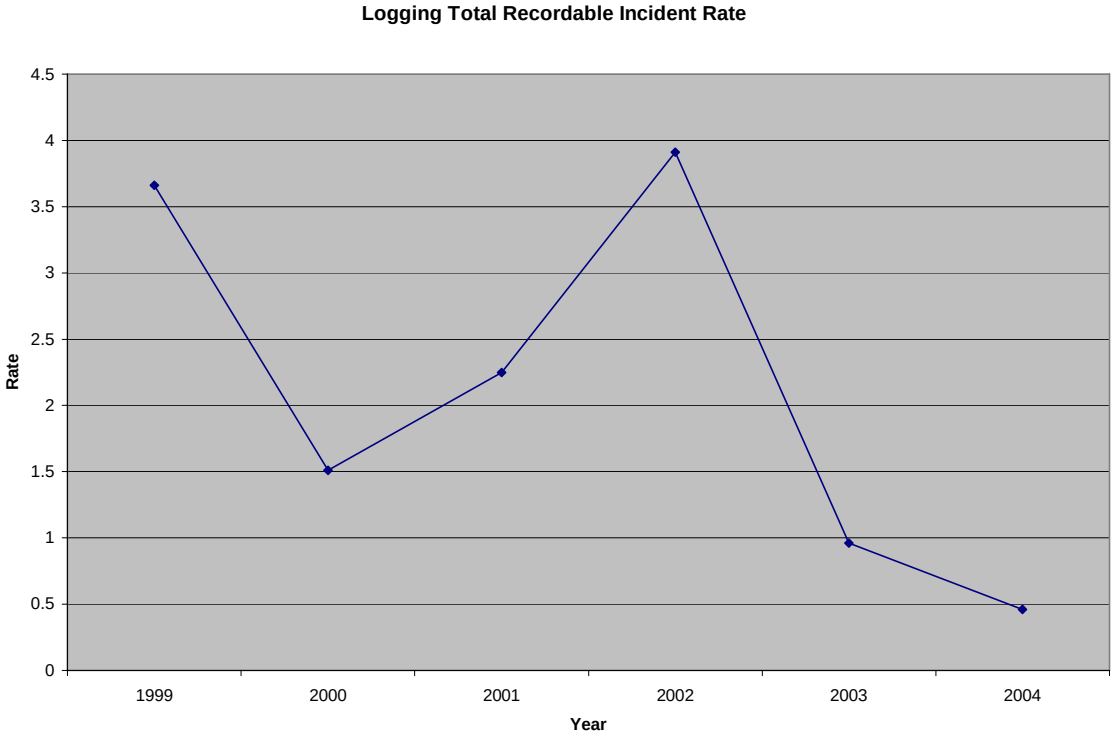




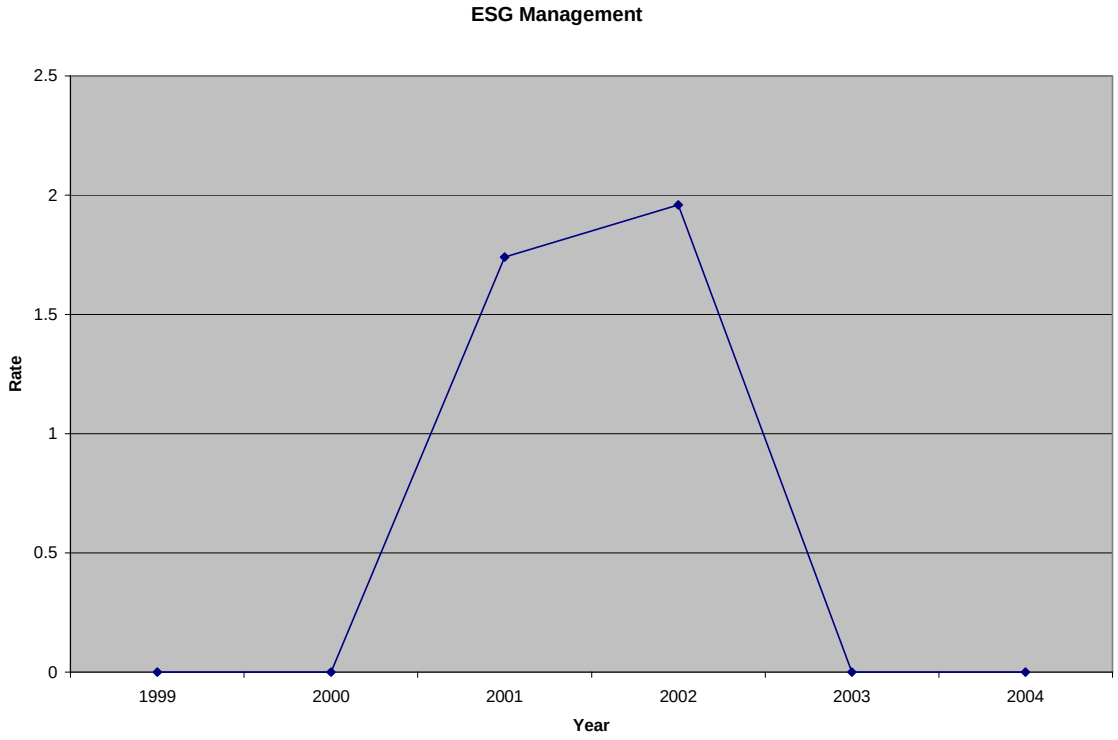
Safety data prior to Sperry Sun's 1999 acquisition by Halliburton is not reported.

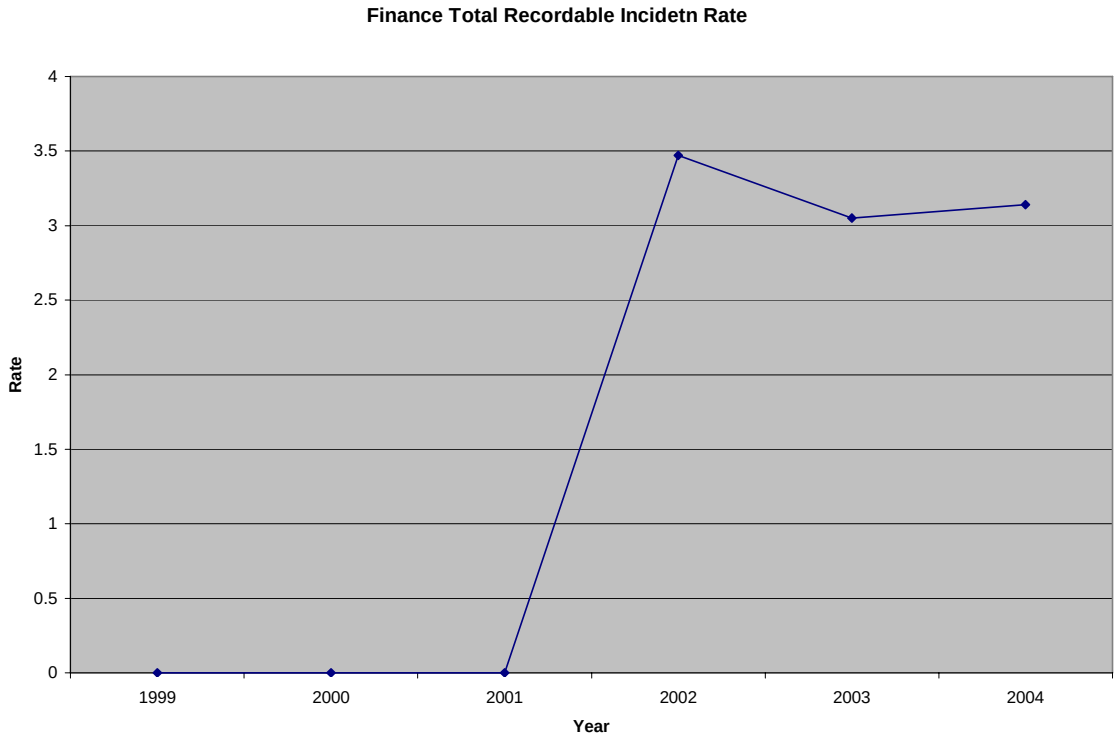
Copyright © 2006 Cambridge Center for Behavioral Studies





Copyright © 2006 Cambridge Center for Behavioral Studies

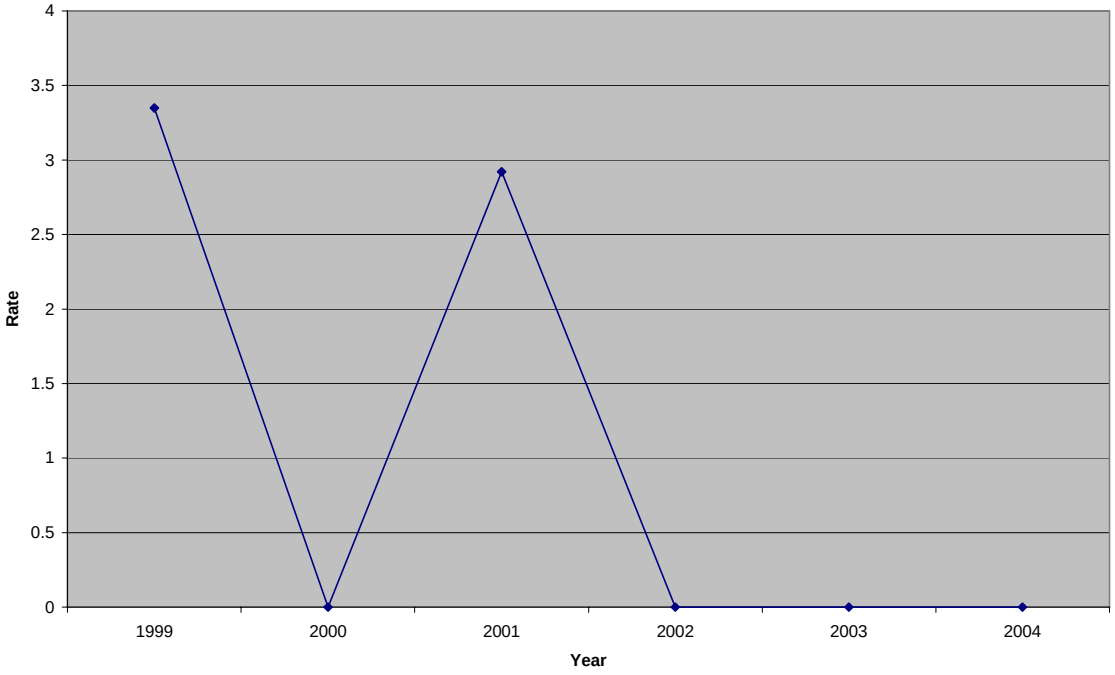




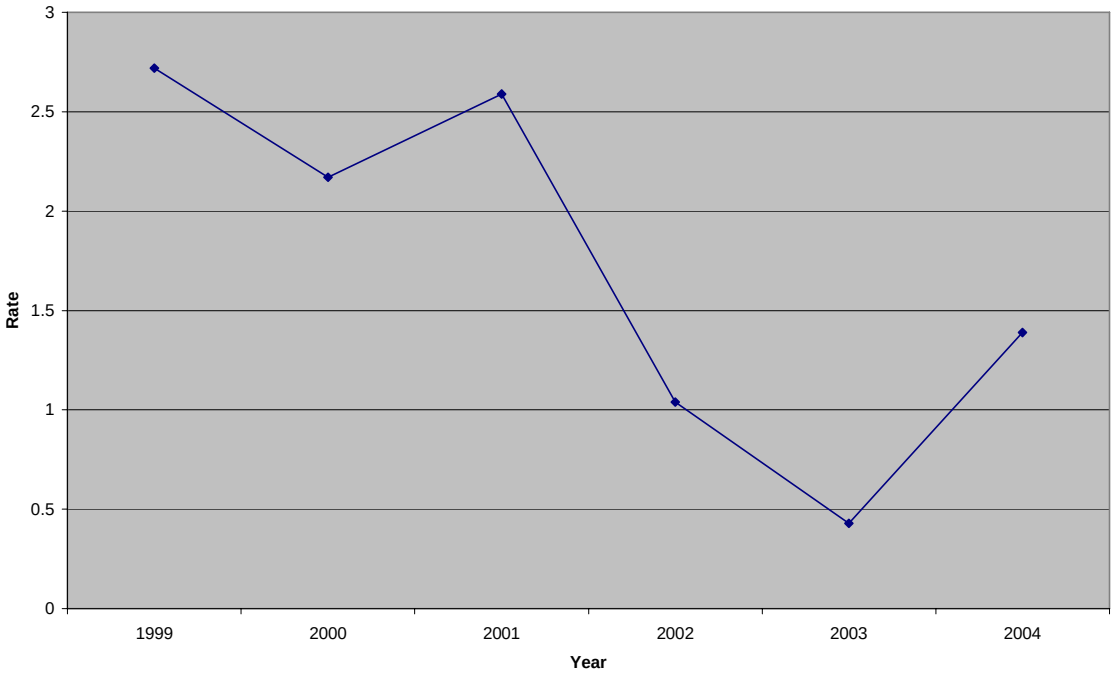
GOM is currently researching an office ergonomics program to reduce office-based njury incidents.

Copyright © 2006 Cambridge Center for Behavioral Studies

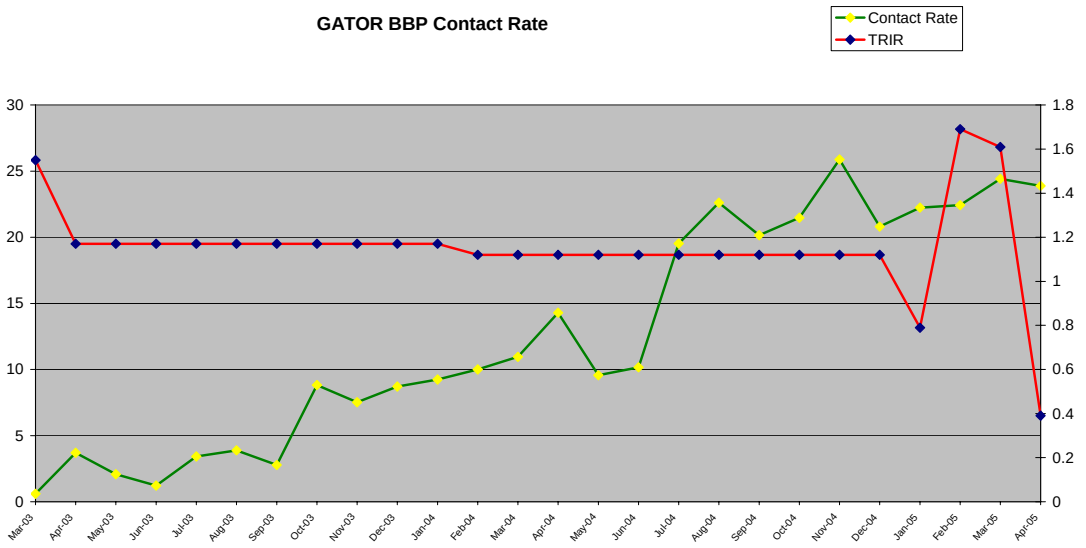
BD Total Recordable Incident Rate



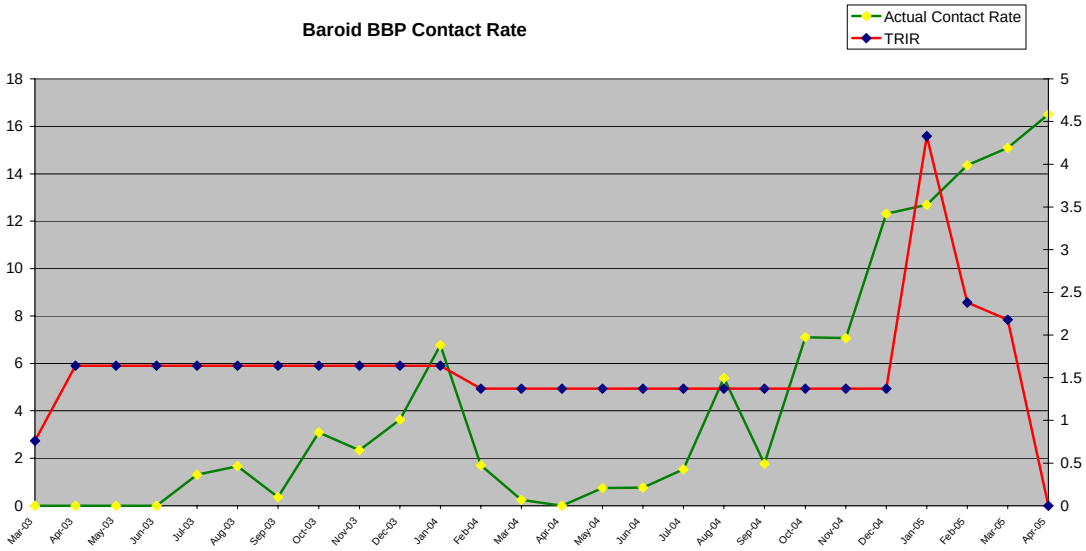
Support Total Recordable Incident Rate



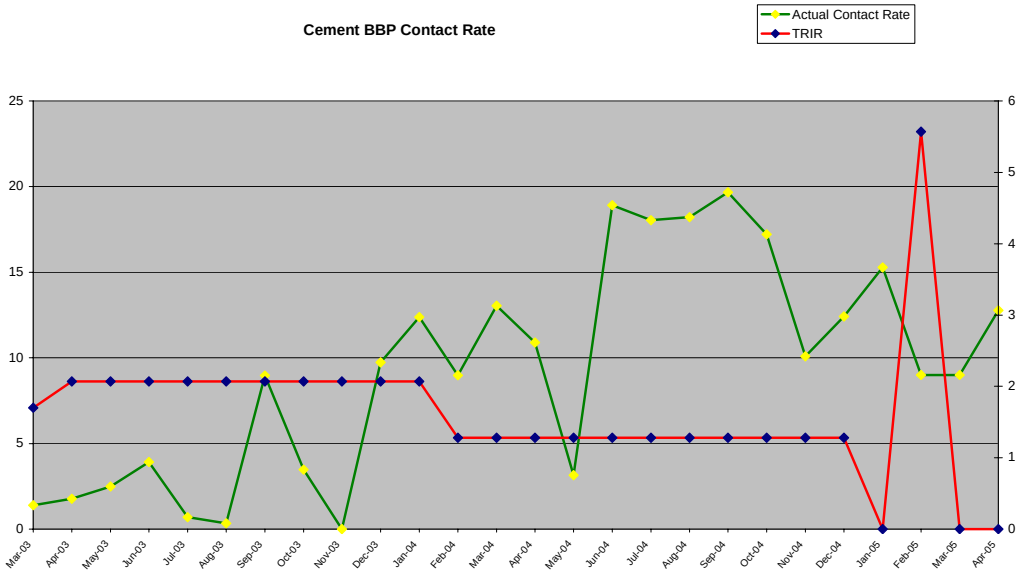
Copyright © 2006 Cambridge Center for Behavioral Studies



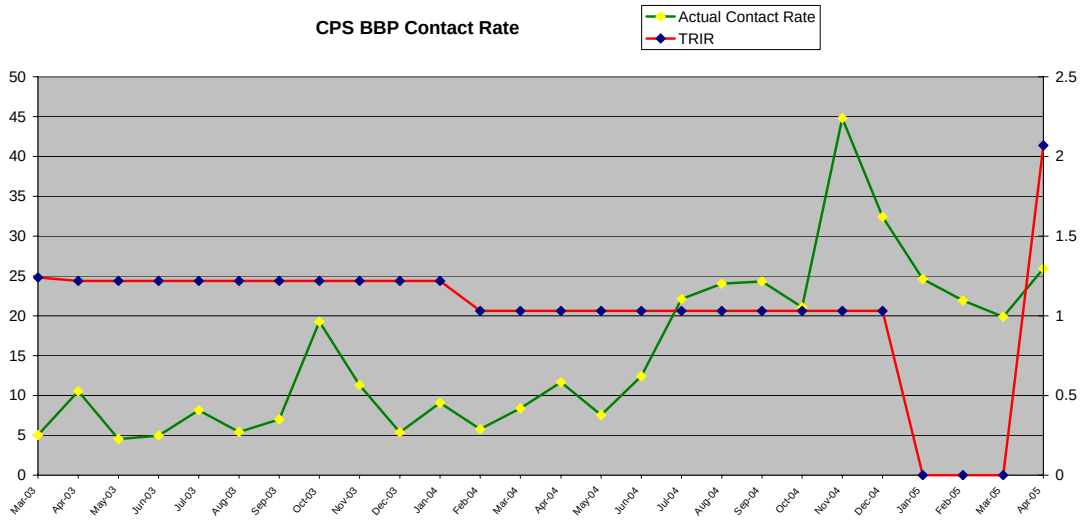
Above is the overall Gulf of Mexico.

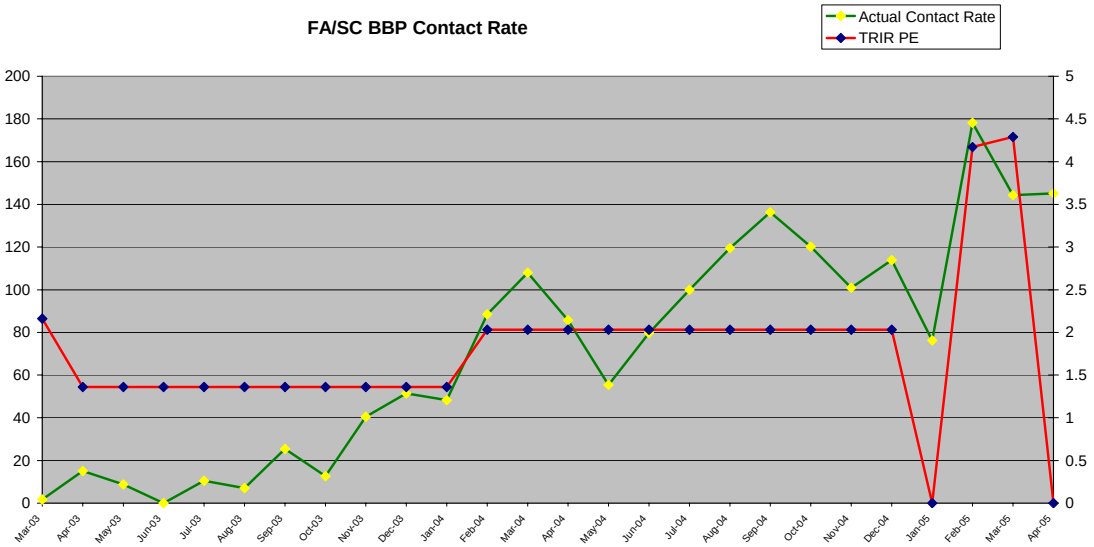


Copyright © 2006 Cambridge Center for Behavioral Studies

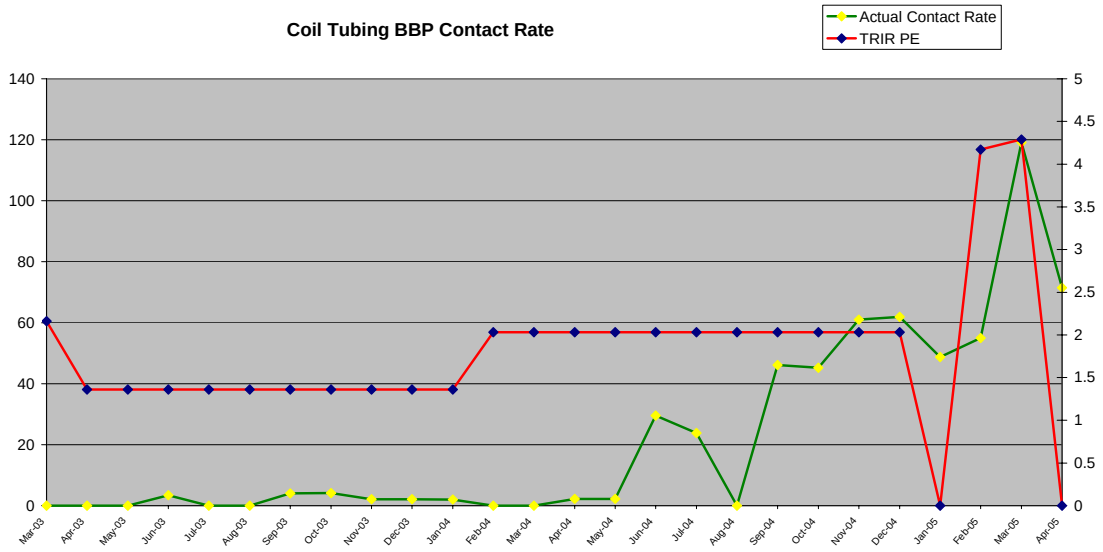


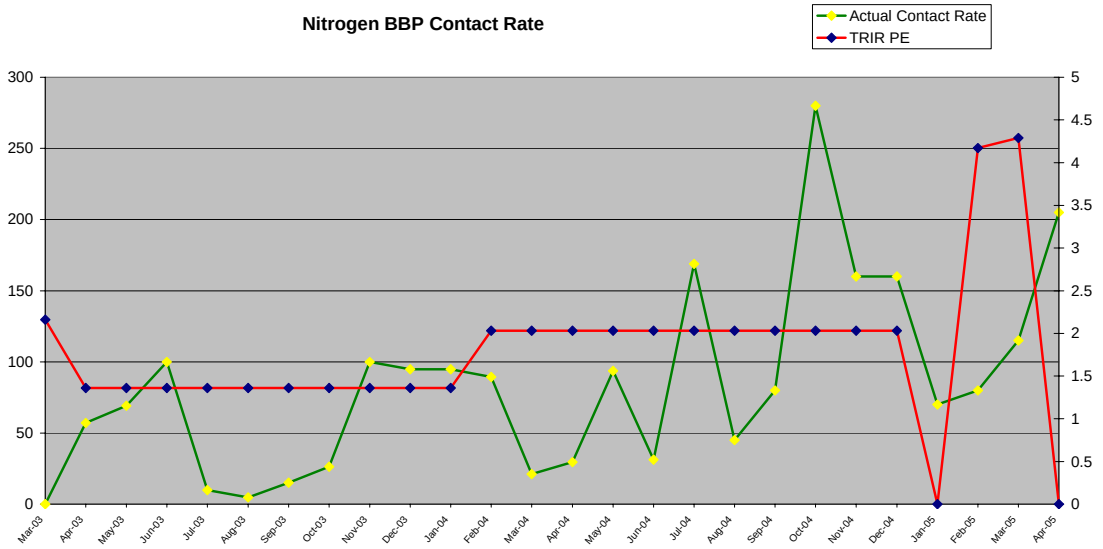
Copyright © 2006 Cambridge Center for Behavioral Studies



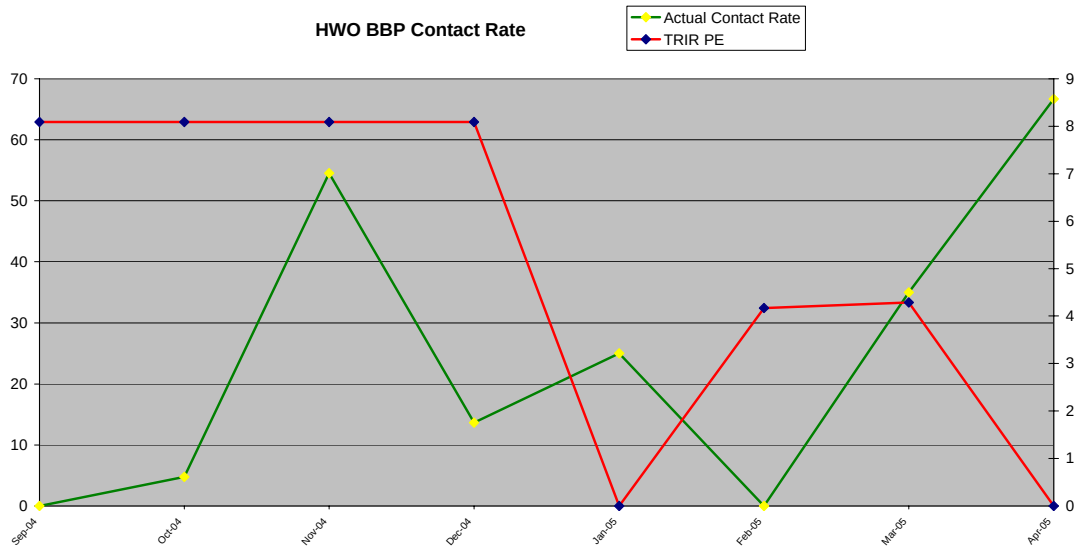


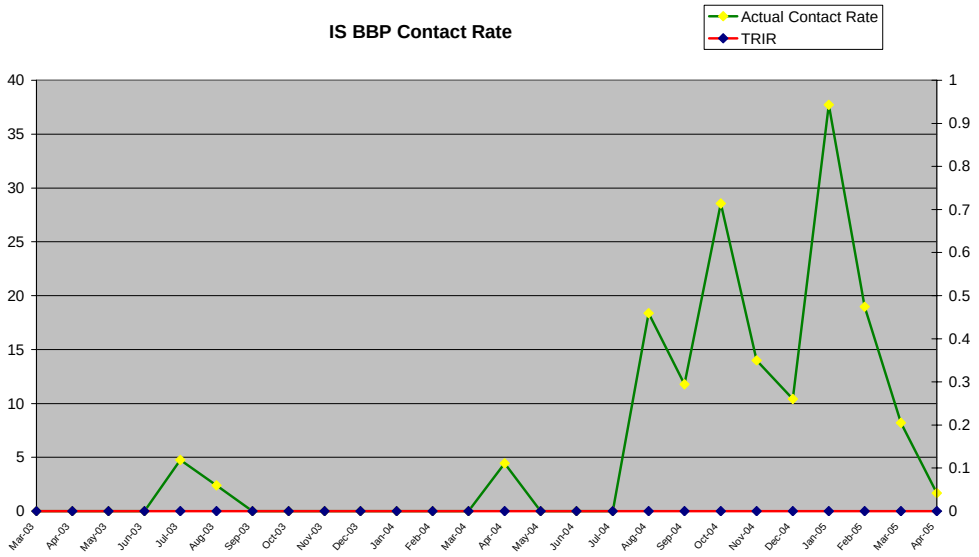
Copyright © 2006 Cambridge Center for Behavioral Studies



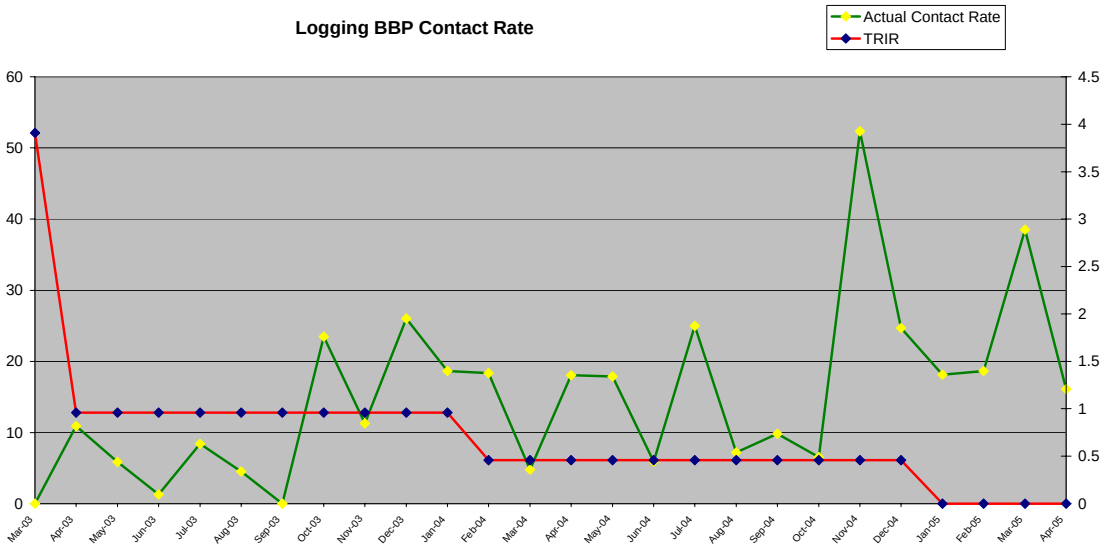


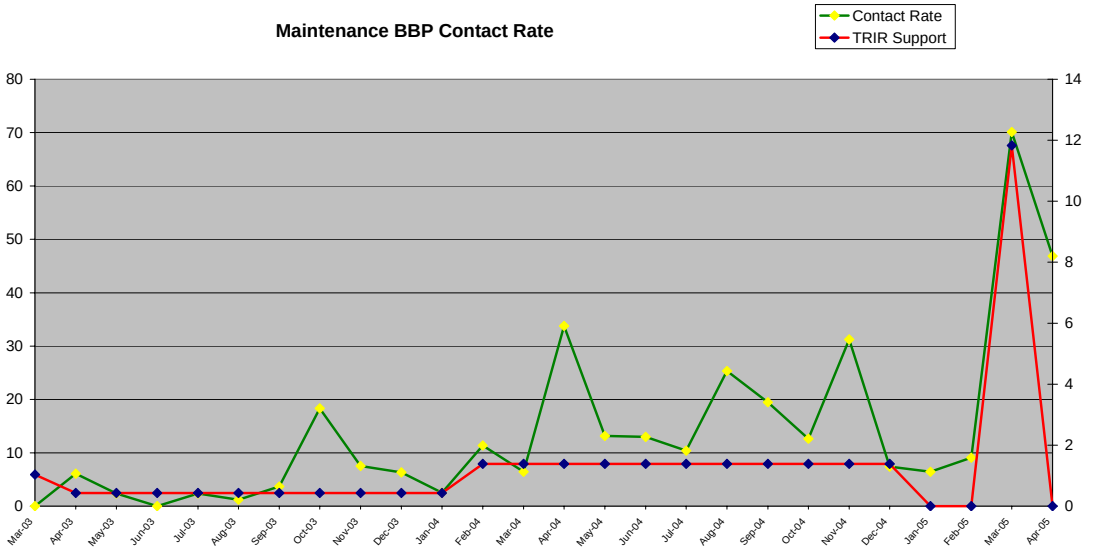
Copyright © 2006 Cambridge Center for Behavioral Studies



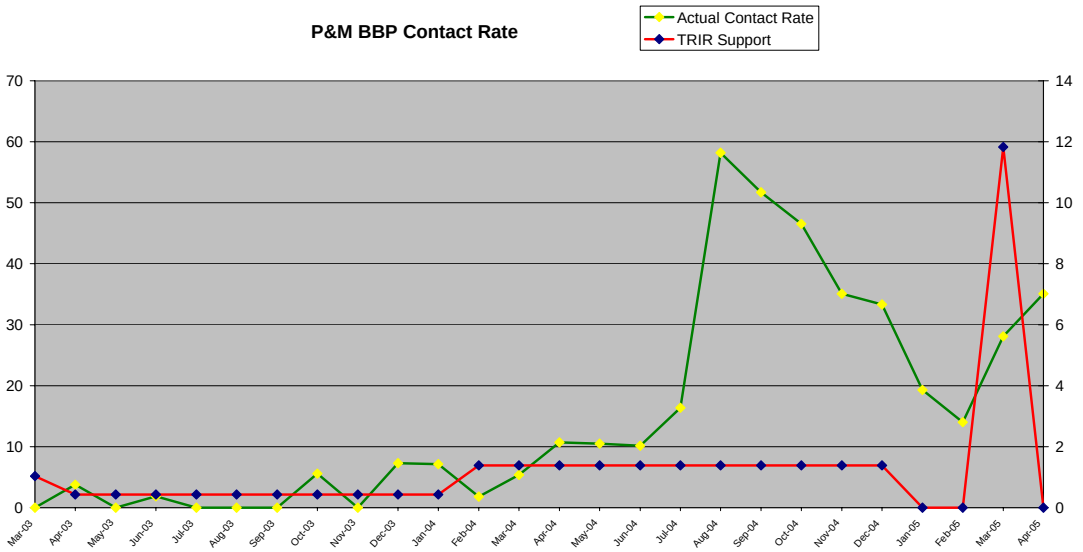


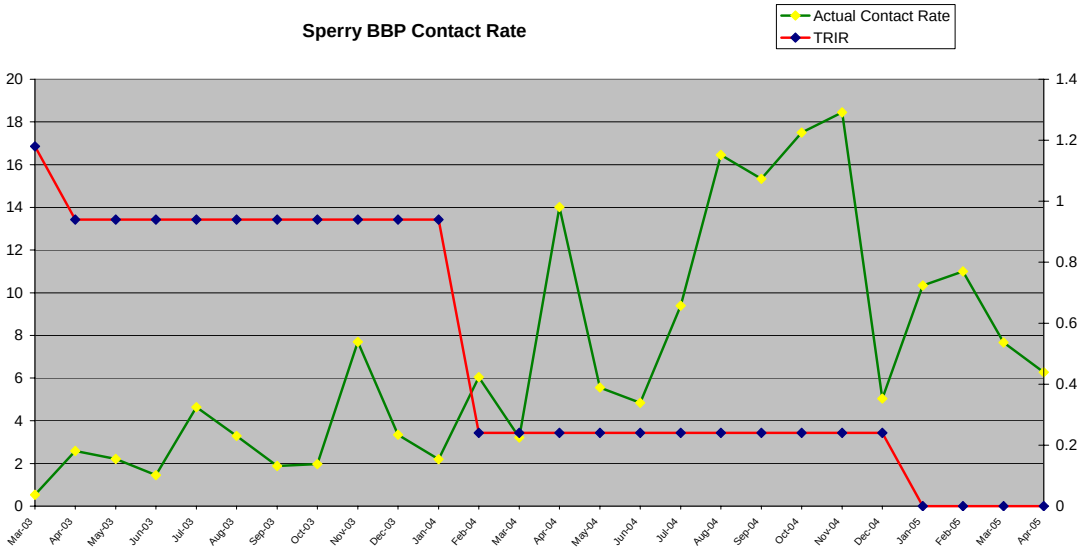
Copyright © 2006 Cambridge Center for Behavioral Studies



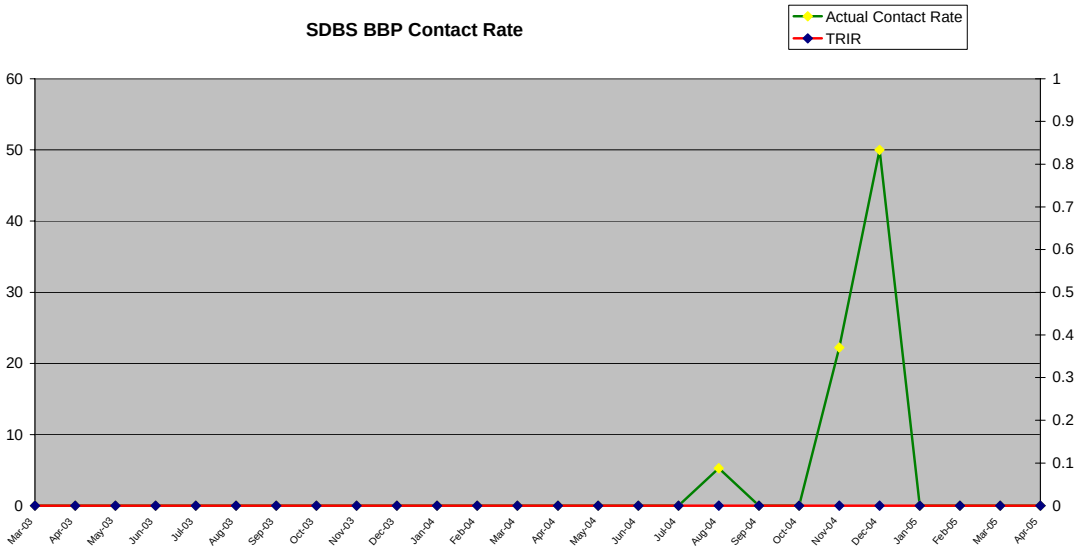


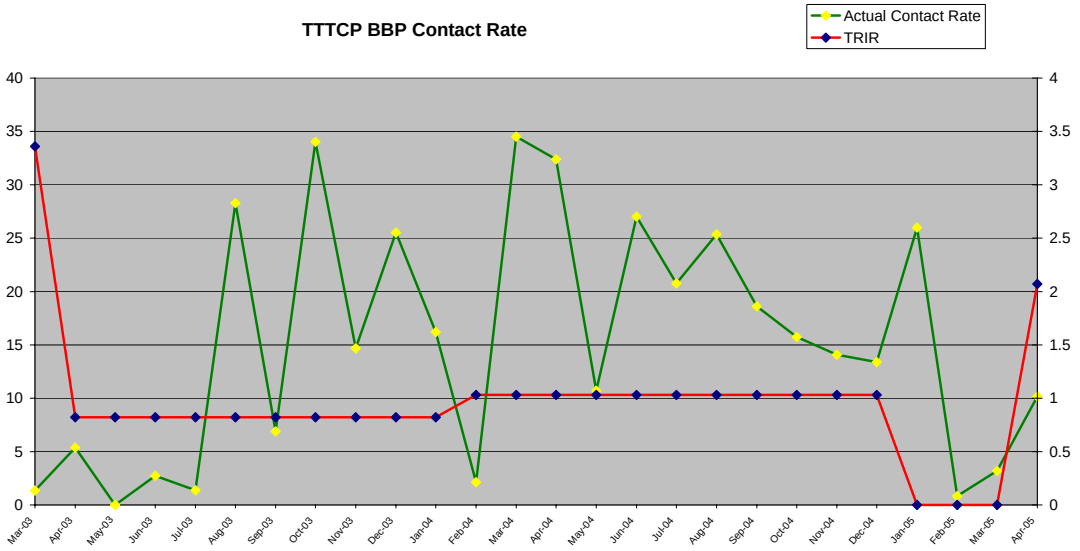
Copyright © 2006 Cambridge Center for Behavioral Studies





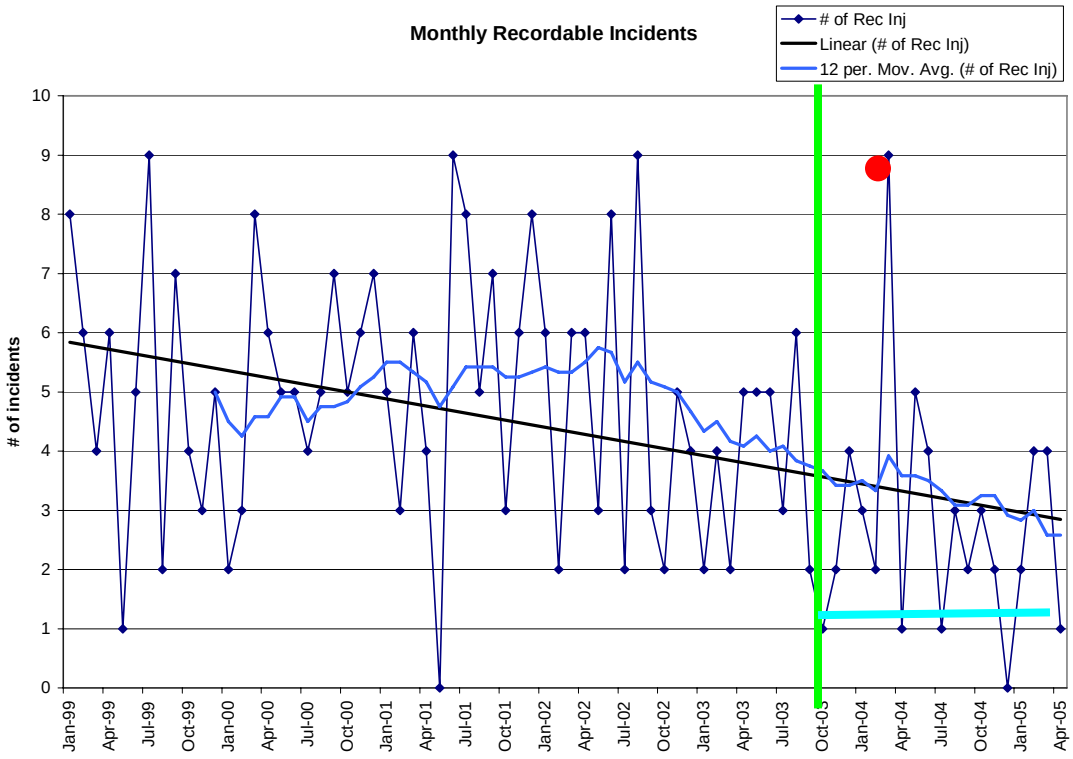
Copyright © 2006 Cambridge Center for Behavioral Studies





Copyright © 2006 Cambridge Center for Behavioral Studies

8. Overall GOM Safety Performance



This graph reflects OSHA recordable incidents from Jan 1999 to the second week of April 2005. The black line is a trend line, the blue line is a 12 month rolling recordable incident rate. The green line is representative of a step change in our safety performance. The red circle spike reflects the loss of 4 employees in a 3rd party helicopter accident (non-Halliburton aircraft).

From February to October 2003 the GATOR BBP went through initial development stages. After October of 2003 the effects of GATOR BBP become visible, continuing an already positive and downward, low, trend in safety incidents.

Copyright © 2006 Cambridge Center for Behavioral Studies

Appendix A
Site Visit Recommendations and Observations

Recommendation to the CCBS Commission on Behavioral Applications

The accreditors, Dr. Bill Hopkins and Dr. Dwight Harshbarger, recommend to the Cambridge Center's Commission on Behavioral Applications that Halliburton's Gulf of Mexico Operations integrated safety program be accredited as an exemplary safety program with a Principles of Behavior Based Safety program as a core component; that this accreditation be for a period of three years.

This recommendation is conditional based on:

1. Completion of necessary revisions of the application,
2. Cooperation in further analysis of safety data,
3. Agreement to update safety performance data on the CCBS web site every 6 months.

The program observations and recommendations of the site visitors are available in the Executive Summary, above, and in Appendix A at the end of this report. recommendations

General Observations

1. The PBBS program is effectively integrated with Health-Safety-Environment initiatives; the programs function seamlessly as a single program.

   Injury incident rates are well below the performance of other Halliburton regions, and well below industry comparisons provided by the Bureau of Labor Statistics.

   GOM incident rates have been sustained at low levels for several years and have progressively improved over time.

2. The BBP programs and processes as described in the application, sampled by site-reviewers in work sites, occur as described in the application. They operate with consistency and in accordance with sound behavioral practices.

3. Safety data entered in the data base are valid. The injury investigation methods appear to be thorough. A number of built in-security procedures prevent anyone from tampering with the data. The data CCBS reviewed are aggregate data based on multiple locations, only some of which were visited and observed. Individual sites may vary in their safety performance.

4. Employees engage in the BBP GATOR (Gulf Coast Action Team Observing Risk) program in positive and appreciative ways.

5. The program leadership is energetic and effective –

Copyright © 2006 Cambridge Center for Behavioral Studies

- There is an effective and fully functioning Steering Committee.
- The Leadership Team, comprised of senior managers, actively promotes and supports BBP.
- The program facilitator is passionate about the program and appropriately focused.

Recommendations for Halliburton's Gulf of Mexico Operations and GATOR

1. GATOR observers, observations
    - Consider steps to increase the number of trained observers; for example, going through observation training could be a company requirement, though participation in the program as an observer could remain, as it now is, voluntary.
    - Develop and implement methods to document, post and reinforce desirable rates of observations by work groups and individual observers.
    - Monitor exactly which employees are observed.
    - Shape and reinforce the behavior of making observations, giving feedback.
    - Examine the distribution of observers across work groups; make sure that observers are proportionally represented in all work groups and departments.
    - Give attention to local sites and PSLs re contact rates - measure, give feedback, and reinforce progress in the achievement of incremental steps towards contact rate goals for each site, each PSL.

2. Gator coaches
    - Develop and implement methods to document, post and reinforce desirable rates of coaching among qualified coaches. Shape and reinforce the coaching participation and behavior.

3. Getting below zero
    - Give additional importance and reinforcement to programs now in place, such as "Beyond the Red Zone", that focus on recording near misses and similar hazard measurement as ways to deepen effective safety practices.
    - As part of this effort, continue and increase GATOR's attention to application of behavioral safety practices in employees' homes and families.

4. WIN – work design and equipment improvements
    - Increase the reinforcement and recognition for work groups who successfully observe and implement changes in work design and equipment.

5. Observations and coaching in drilling operations, off-shore and on-shore

Copyright © 2006 Cambridge Center for Behavioral Studies

- Off-shore and on-shore drilling customers' work and time utilization requirements place constraints on coaching opportunities and to a lesser degree on making observations.
- Consider the development of alternative observation and coaching methods for off-shore and on-shore drilling operations. For example, do observations during the performance of jobs in ways that permit integration with brief periods of observations.
- Coaching might be delayed for off-shore teams until the return to land-based work, or for on-shore drill teams after they return to their PSL home sites, within a specified period of time. For example, within 24 hours after the observation and / or arrival on shore or at the PSL home site.
- Work to install at least one observer and one coach in every off-shore and on-shore drilling team.

6. Continue efforts to expand ergonomics analyses of job demands and performance.

7. Assess ways to extend BBP and the integrated safety program into other regional operations of Halliburton.

- Compare estimates of the total (direct and indirect) costs of incidents and injuries across regions; develop the business case for the value of GOM safety effectiveness in both human and financial terms.
- Offer GOM-based training opportunities to other parts of the company.
- Assess the possibility of intra-company streaming of BBP training and program development.
- Publicize the achievement of accreditation standards; challenge other regions to work equally safely and meet these standards.

Copyright © 2006 Cambridge Center for Behavioral Studies