

Back to the Basics to the Future

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MINDSET and CHANGE

- ▣ MAINTENANCE IMPROVEMENT is AN EXERCISE IN MINDSET

- ▣ Mindset PPS

- ▣ CHANGE IS UNCOMFORTABLE

- ▣ DO NOT INVALIDATE THE PAST!!



What is KAZAKHMYS?

Kazakhmys PLC is an international natural resources company, listed in the UK, with its principal operations in Kazakhstan and the surrounding region.

- **Kazakhmys was one of the top 5 performing stocks in London for 2009**
- **The core business is the production and sale of copper. 8th largest producer in the world.**
- **Kazakhmys is fully integrated from mining ore through to the production of finished metal.**
- **The copper division produces significant volumes of other metals as by-products, including zinc, silver and gold.**
- **Largest power producer in Kazakhstan with >20% market share.**
- **+65,000 Employees**



KAZAKHMYS --- COPPER at a GLANCE

- **20 Copper Mines (including open pit and underground)**
- **2 major growth projects—Both funded (Boshekul and Aktogay)**
- **10 concentrators**
- **2 smelters**
- **Precious metals refinery**
- **Sulphuric acid plant**
- **3 power plants**
- **In house railway network**



FABRICATION, GOLD and PETROLEUM

MKM

- ▣ **Copper fabrication business in Germany**

GOLD

- ▣ • **3 gold mines**
- ▣ • **2 gold projects**
- ▣ • **1 silver project**

PETROLEUM

- ▣ **602 km² exploration block**

Russia

Kazakhstan

Boschekul
Ekibastuz
Maikuben

Astana

Aktobe

Karaganda Region

North & West Nurkazgan

Orlovsky
Artemyevsky
Nikolayevsky
Central Mukur
Chansk Gold Belt & Zhaima
Yubileymo-Snegirikhinsky
Irtysky
Balousovsky
Ust-Kamenogorsk

East Region

Eastern Akzhar

Sary-Oba
North
West
Stepnoy
East
Annensky
South

Zhezkazgan Complex

Balkhash Complex

Taskura
Zhomart

Kounrad
Sayak
Aktogay

CASPIAN SEA

ARAL SEA

Shatyrcul
Almaty

Bishkek
Bozymchak
Kyrgyzstan

China

Dushanbe
Akjilga
Tajikistan

- Copper mine/project
- Coal mine
- ▲ Power plant
- Gold mine/project
- ✂ Petroleum project





**LET'S START OFF BY CALLING THE
PROFESSION WHAT IT REALLY IS.....**

MAINTENANCE!!!

**IT PROVIDES CLARITY to THOSE WHO
HAVE THE MONEY 😊**



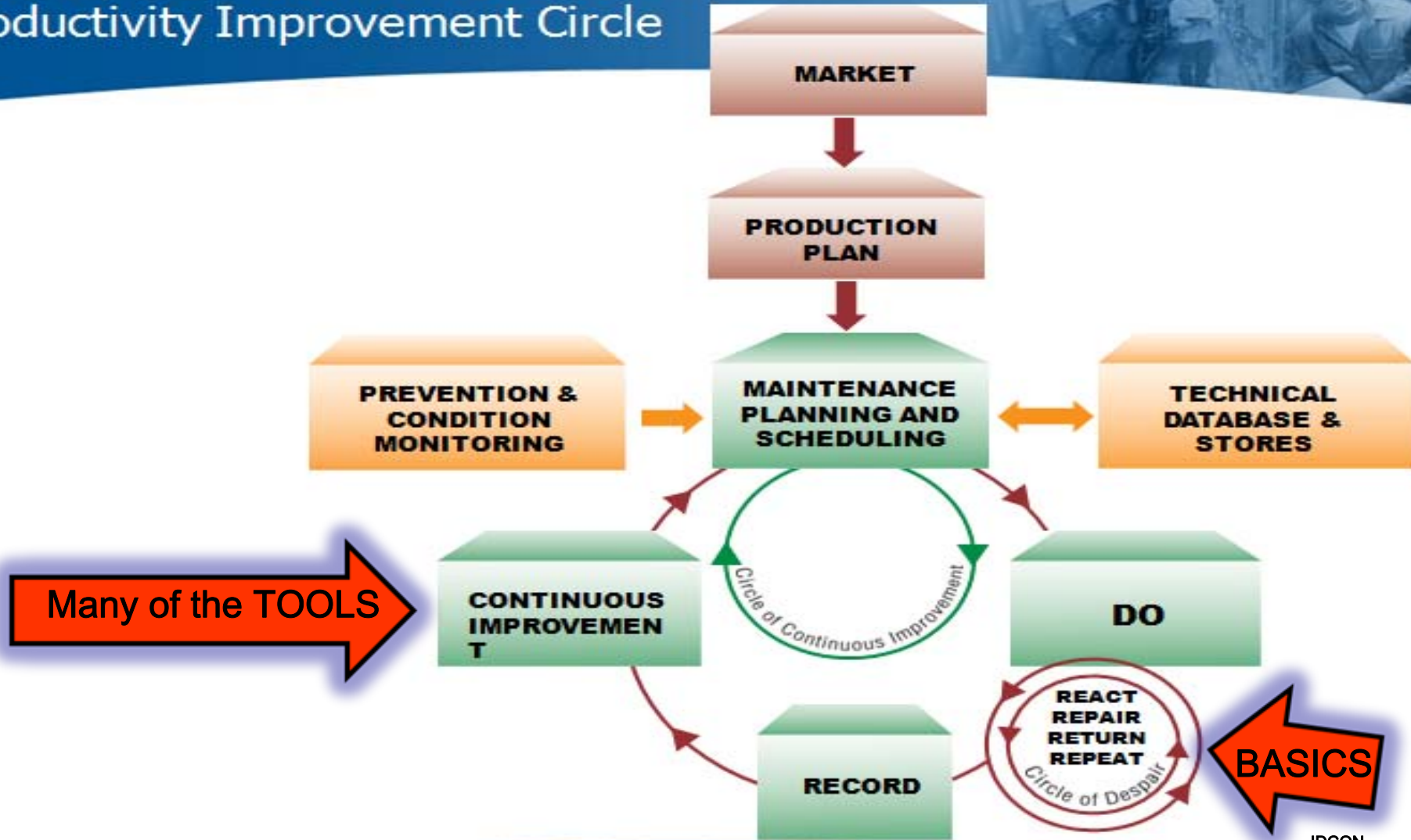
WHAT IS OUR MOST VALUED ASSET?

▣ SORRY, IT IS **NOT** PEOPLE !!!!!!!

▣ IT IS THE **RIGHT** PEOPLE in THE **RIGHT** PLACES!!!

BREAK OUT OF THE Circle/Cycle of DESPAIR—”Back to Basics” to Break

Productivity Improvement Circle





SO MANY TOOLS, TOO LITTLE TIME!!! (The Alphabet Soup of “Silver Bullets”)

Lean

5S

CT

PS

TPM

6Sigma

FMEA

RCA

PDM

RCM

SCO

ETC> ETC>ETC>



FACTS of LIFE

FACT- 1

80-20 RULE PREVAILS. **MANY** “SILVER BULLETS” DESIGNED FOR 20% WHO HAVE THE BASICS FUNDAMENTALLY EMBEDDED, NOT THE OTHER 80% OF US.

FACT—2

NO MATTER HOW SEXY IT APPEARS, MANY, IF NOT MOST OF THE TOOLS ARE HEAVILY DEPENDENT ON A FULLY FUNCTIONING, AND BORING, “BASIC MANAGEMENT” SYSTEM

FACT---3

MY NAME IS DALE EKMARK, AND I USED TO BE A THREE LETTER ACRONYM (TLA) ADDICT 😊. I WAS ALWAYS ON THE HUNT FOR THE HOLY GRAIL OF MAINTENANCE. THERE IS NONE...HARD WORK and ENABLING PEOPLE IS THE ANSWER!!!



Sanity Check

“...the best performers execute the basics of reliability and maintenance very well, while the average performers just talk about what needs to be done, or work too much on installing new “advanced” systems, forgetting the basics.”

**Torbjorn Idhammar
IDCON, Inc**



The Basics

- ▣ A VISION BASED ON REALITY—**A PICTURE OF SUCCESS**
- ▣ THE RIGHT PEOPLE IN THE RIGHT PLACE—80% SUCCESS is PEOPLE-BASED
- ▣ SAFE BASIC WORK PRACTICES ,EXCELLENT HOUSEKEEPING, & CLAIR
- ▣ LUBRICATION MANAGEMENT AND CONTAMINATION CONTROL
- ▣ BASIC AND UNWAVERING EXCELLENT MAINTENANCE PRACTICES.
(BALANCING-ALIGNMENT-COOLING ETC)
- ▣ ACCEPT THE “TRUTH”—UNDERSTAND WHERE YOU **ARE**, NOT WHERE YOU “**THINK**” OR BELIEVE YOU ARE.
- ▣ UNDERSTANDING OF THE PF-CURVE
- ▣ FOCUS ON A SIMPLE WORK MANAGEMENT SYSTEM
 - ▣ WORK IDENTIFICATION
 - ▣ PLANNING
 - ▣ SCHEDULING
 - ▣ EXECUTION

ENABLING THE VISION TO BE ACHIEVED



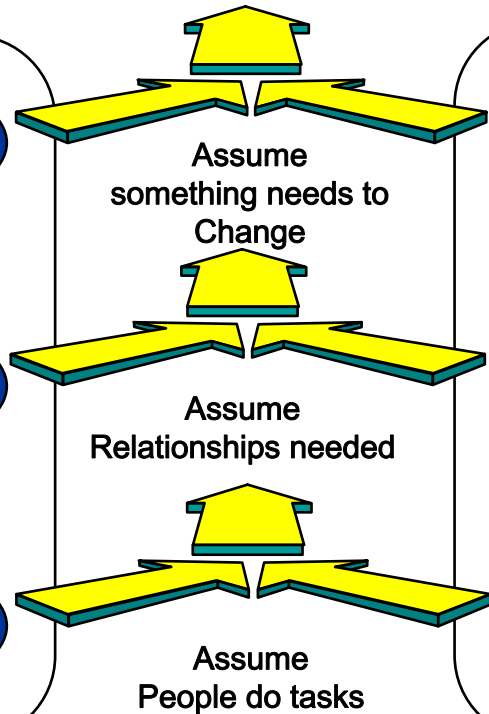
Safe, Reliable and Prosperous Organization
'Our Picture of Success'

"Enabled"
by doing "things" right
80% Effort Required
Leadership or People
Based Enablers

MISSION
What we do, for whom
& what drives us

"Achieved" by doing the right
"things"
20% of the Effort
Management and Technical
Solutions

- CULTURE**
What we believe to be true
What we value
- TEAMS**
Able & Willing to work together
towards common goals
- PEOPLE**
Able & Willing to do the
required tasks



- STRATEGIES**
Key Areas where we need
to achieve a Result
- GOALS**
Specific targets in each
key result area
- TASKS**
Day to day activities to
achieve the goals

THE RIGHT PEOPLE!!!!

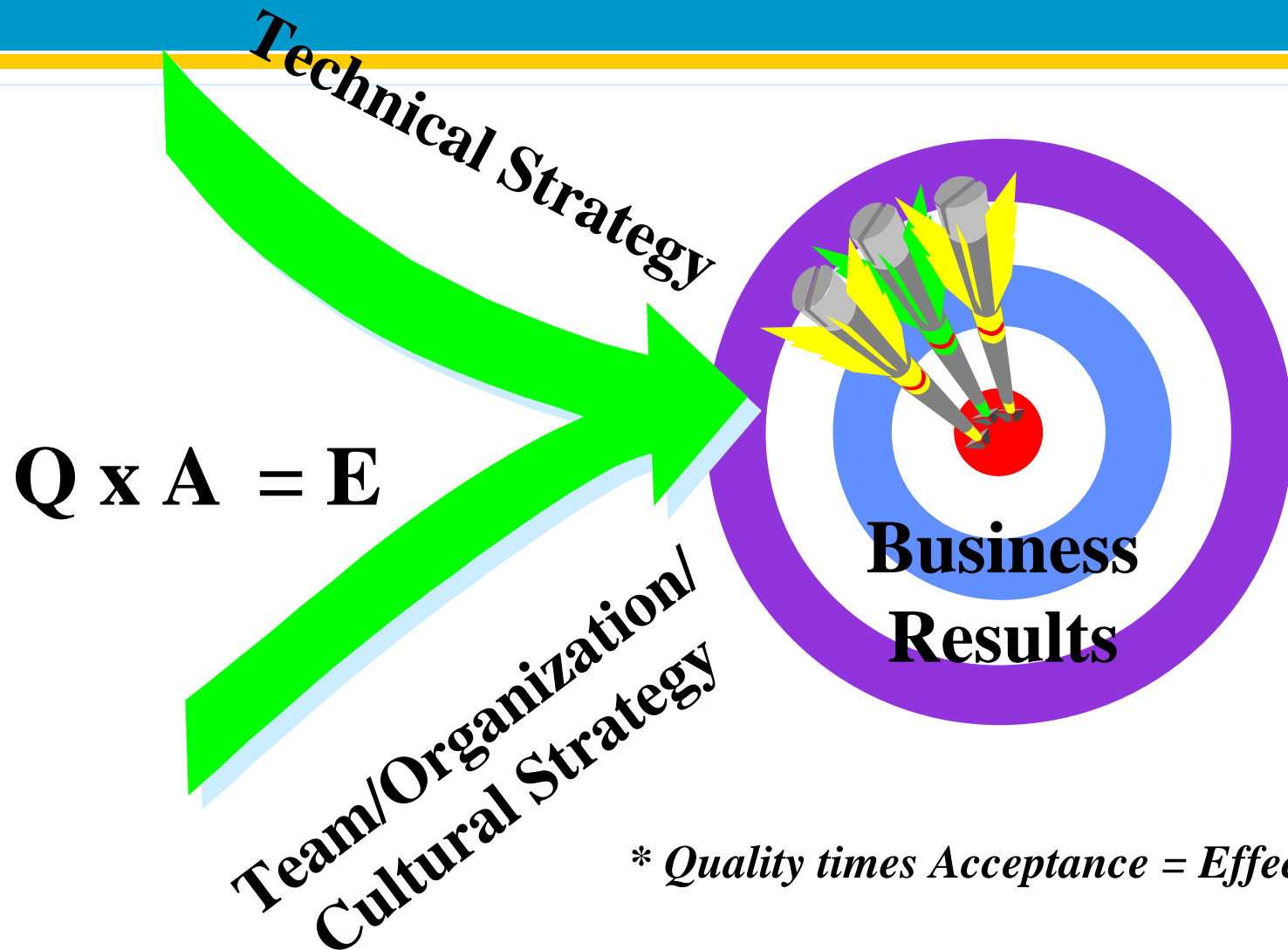
KAZAKHMYS



Kazakhmys PLC
Annual Report and Accounts 2008



GENERAL ELECTRIC APPROACH TO CHANGE--CAP



$$Q \times A = E$$



Q= Quality of Solution (Technical)

A= Acceptance of Solution

E= Effectiveness of Solution

Q(Techie)	A (People!)	E
10	1	10
5	5	25
5	10	50





Basics of Contamination Control-CAT Style

Housekeeping. A clean shop means there is less dirt, dust and grit to get into components or to be transferred

Proper parts handling and storage. Keep components packaged until they are ready to install, and store them

Hydraulic hose assembly and storage cleaning. Clean and cap hoses and tubes. Clean the inside of each hose

Oil storage and transfer. Equip both oil and diesel fuel storage tanks with desiccant breathers to keep dirt and

Filter changing. Always meet oil and filter change intervals. Carefully remove used filters to ensure that

Operation and maintenance. Make sure equipment is inspected daily for leaks and fix immediately if any

Particle counting. The human eye can't see most of the dirt that damages machine systems—and it doesn't



HOUSEKEEPING AT Alumbra Mine Workshop--Argentina





UNDERGROUND OPPORTUNITY FOR IMPROVEMENT





LUBRICATION MANAGEMENT AT MUSSELWHITE MINE—ONTARIO, CANADA



Old Greaser Method



570 Level



150 Level



670 Level



500 Level

Six New Underground Grease Stations





Oil Safe Containers



Getting Started - The 5 S Housekeeping System





ESSOTRANS
30

80W90

VAR SOL

ANTIFREEZE

BULK
GREASE

ES
E155-7
JUNE 4-07



EPC 02-6052



CONTAMINATION CONTROL





Apply BASIC Principles of C.L.A.I.R.

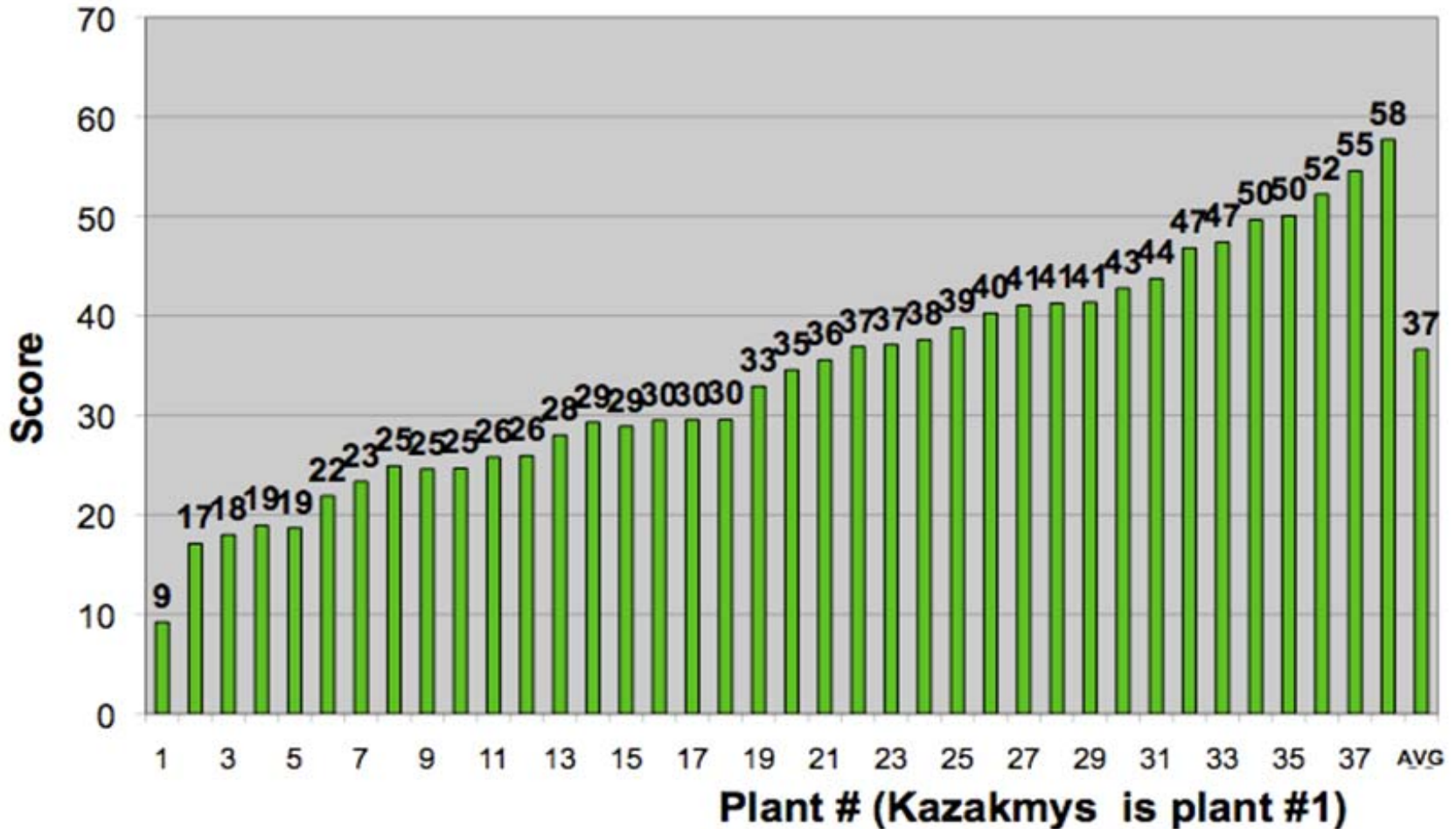
- ▣ Clean
- ▣ Lubricate
- ▣ Adjust
- ▣ Inspect
- ▣ Repair

(NOTE—USUALLY ASSOCIATED WITH OPERATOR PERFORMED MAINTENANCE HOWEVER PRINCIPLES SHOULD BE APPLIED ACROSS THE BOARD)

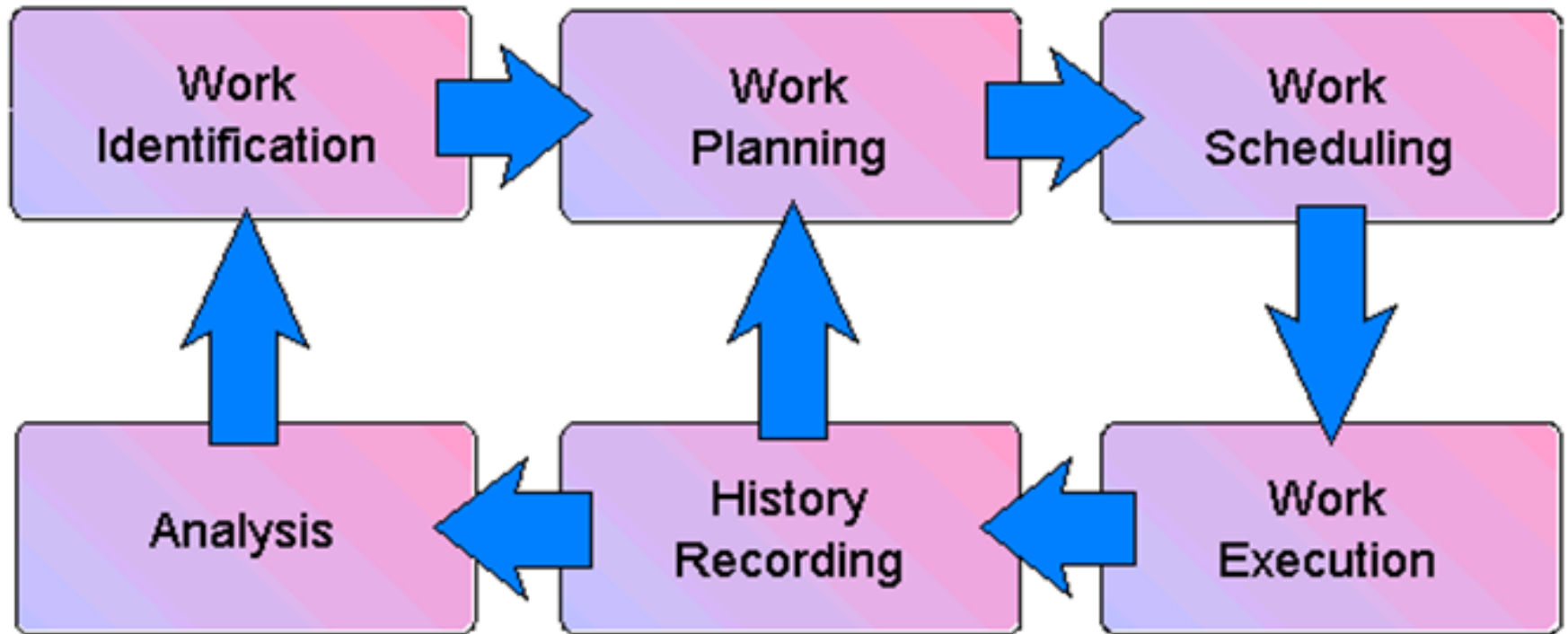


IDENTIFY AND ACCEPT THE TRUTH!!!---A LOW “SCORE” is NOT NEGATIVE-CONSIDER IT AN OPPORTUNITY TO IMPROVE !!!!

Total CBP Score by Plant



FUNDAMENTAL MANAGEMENT SYSTEM—THE FOUNDATION



**Welcome to Jwaneng Mine,
Where We Passionately Mine
Diamonds!**







BASICS of RELIABILITY AT JWANENG

- ▣ MAIN TREATMENT PLANT IMPROVEMENT
 - ▣ Weekly Shutdowns Reviewed by Teams and Bottlenecks Eliminated.
 - ▣ UPTIME and Stability of Plant Improved Significantly
 - ▣ Additional Revenue of \$200,000,000 realized by minimal investment
 - ▣ Mine Total Revenue is \$2.2 Billion/year after improvement.
 - ▣ Profit Margin is .85 to .9.

- ▣ PEOPLE and BASICS---NOT Technical Solution.

SISU- “PERSERVERENCE”



**GOOD LUCK and THANKS FOR THE
OPPORTUNITY TO SHARE WITH YOU!!!**