

LITTLETON/ENGLEWOOD KNOWLEDGE MANAGEMENT INITIATIVE:

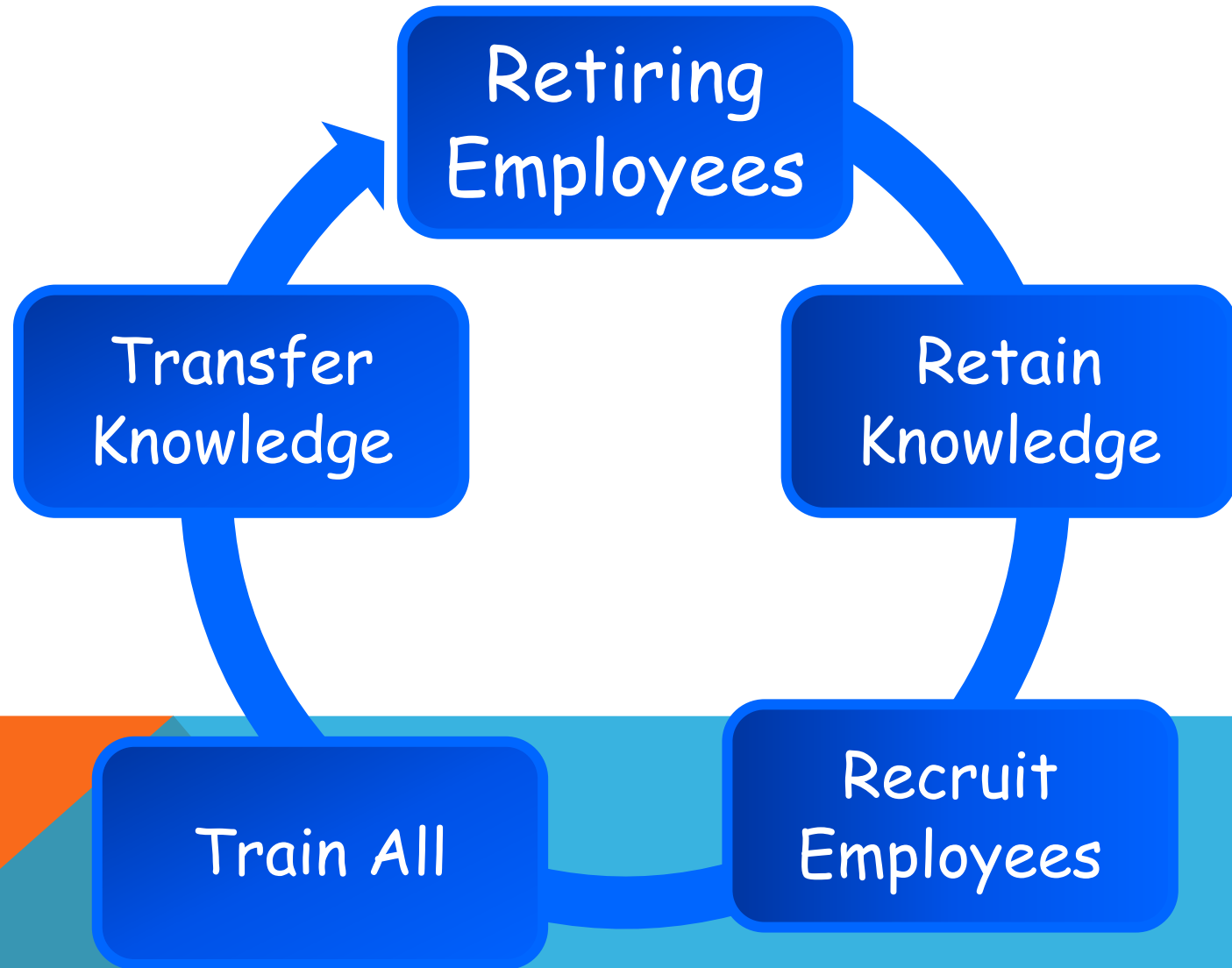
STANDARD OPERATING PROCEDURES
BUILDING BLOCKS FOR STAFF PREPAREDNESS



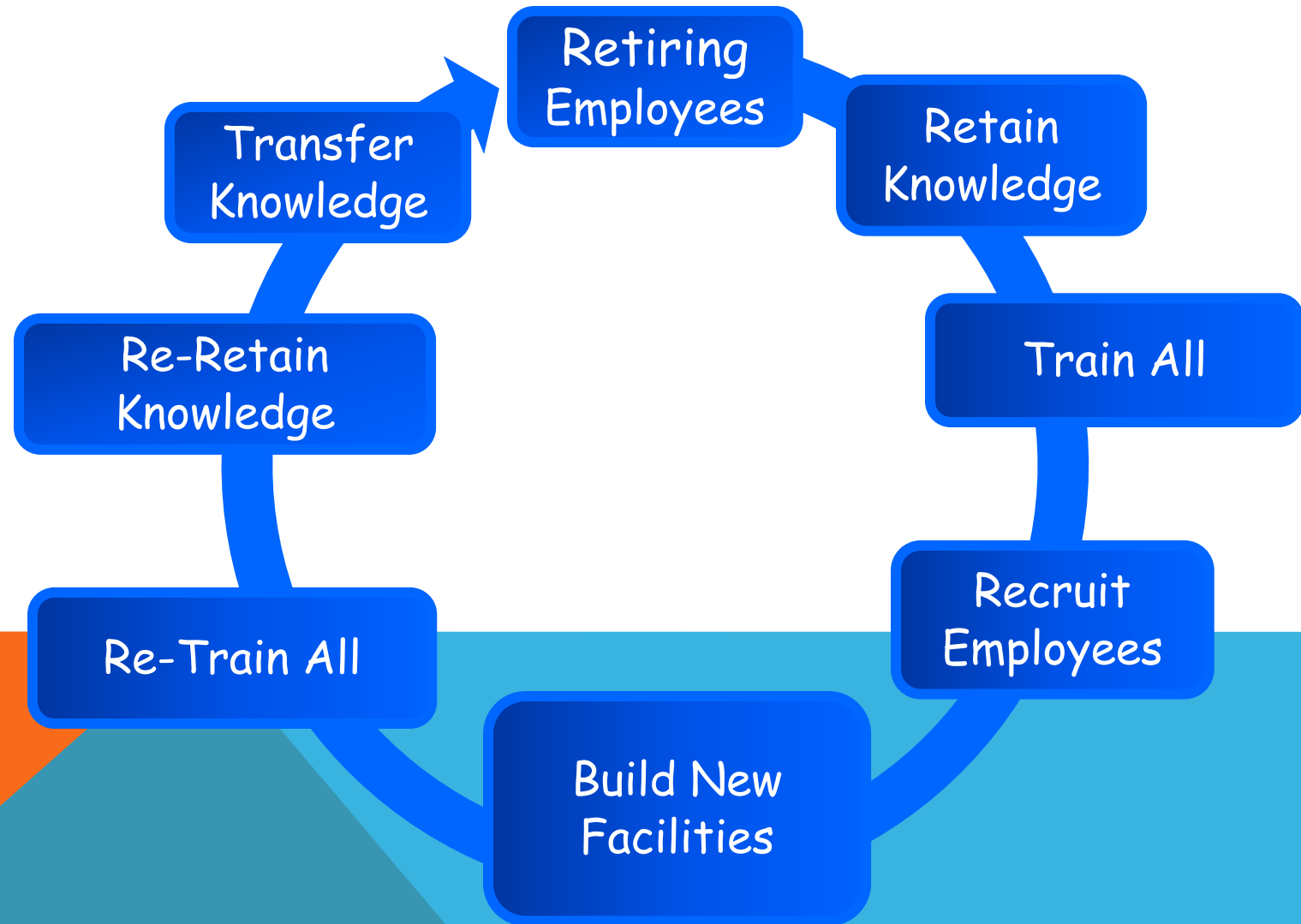
By Cindy Goodburn, Business Services Manager
Littleton/Englewood Wastewater Treatment Plant



THE CHALLENGE



THE REAL CHALLENGE



KNOWLEDGE MANAGEMENT IS

A combination of:
people, processes, and
technologies.



KNOWLEDGE IS AN ASSET

Assets must be maintained,
improved upon, and tracked.





HOW TO ADDRESS THE PROBLEM

Littleton/Englewood Wastewater Treatment
Plant Knowledge Management Initiative:
'InfoNet'

- Using an Online Manual to Capture Knowledge
- Using Asset Management System to track and review SOP's
- Using Computerized Systems to Store and Retrieve Information



PEOPLE KNOWLEDGE MANAGEMENT TEAM WORKFLOW CHART



KNOWLEDGE MANAGEMENT TOOLS

INFONET



OMS Connect Software Plant-wide Intranet site containing

- Plant O&M Manual
- Electronic SOP's, SMP's
- Design drawings, Equipment manuals
- All things safety related
 - MSDS, confined space, arc flash, LO/TO, emergency response, etc.
- Policies
- Permits – discharge, air, biosolids
- Training Materials

CMMS



Infor EAM Enterprise Knowledge Assets

- Assign Document #
- Create Work order
- Annual PM work order

Track changes

Track revisions

Track costs

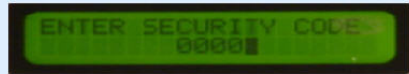

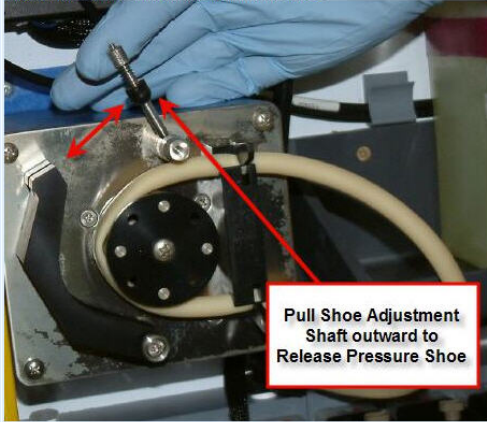
STORE AND RETRIEVE

INFONET




Stores knowledge in a tangible, retrievable format

- All facility information available from one source
- Information is accurate and complete
- End users have feedback
- Ease of access and use
- Ensure consistent look, feel
- Access throughout the plant

Step:	Response:	Photograph:
1.0 Place the Instrument in OFF LINE Mode	<p>Press the CLEAR key on the keypad. After a few moments the following message will appear.</p>  <ul style="list-style-type: none">• Enter 0000• Press Enter key.  <p>CAUTION! Failure to place the instrument in the OFF LINE mode will result in the pump starting without warning. This could cause injury to the person changing the pump tubing.</p>	
1.2 Release Tube Pressure	<p>Release the pump tube pressure shoe by pivoting the shoe adjustment shaft out of the slot in the shoe.</p>  <p>Pull Shoe Adjustment Shaft outward to Release Pressure Shoe</p> <p>NOTE: Adjustment of the shaft knurled nut and lock nut should not be necessary in normal operation. These are adjusted and locked in place at the factory to reduce field maintenance time.</p>	

INFONET



an Infection Point Solutions product

WELCOME TO LEWWTP INFONET

[HIDE TOC](#)
[SEARCH](#)
[GLOSSARY](#)
[DOWNLOAD CART](#)
[HELP](#)

TUESDAY AUGUST 27, 2013

[BACK](#)
[REFRESH](#)
[EDIT](#)
[NOTES](#)
[HISTORY](#)
[PRINT](#)
[ADD TO CART](#)

ADMINISTRATOR SWITCH USER

Welcome to LEWWTP InfoNet

- Plant Manual
- General Information
- Plant Calendar
- Emergency Response
- Safety
- GIS Site
- Training
- Plant Library/Reference/Permits
- Beneficial Use
- Siz Services
- Industrial Pretreatment
- Laboratory
- Maintenance
- Operations
- OMSConnect Migration Cleanup
- Under Development
- Templates

WELCOME TO LEWWTP INFONET


SANITATION DISTRICTS
Right click on link, then click Open in New Window

PLANT DISCHARGE PERMIT

Assessment of Existing Disinfection System by CH2MHILL

Vendor and Manufacturer Address Book

Service Area Map



On-Site Spill Response

SDS (MSDS)

B&C Dewatering Report

I/I Study Report

Accident Reports

NEW as of 8/14/2013

Operations Arc Flash Safety Awareness	Raw Sewage Pump (RSP) Removal/Installation	Centrifuge Offsite Rebuild Removal and Installation of Centrifuge Bowl	SCT Diffuser Stone Replacement SMP	Methanol Pump Hose Replacement
Methanol Pump Flush Procedure UPDATED	ISCO 5800 Checking Error Status	Headworks Emergency Generator Refueling	Uniforms UPDATED	Unusual Influent Sample Collection UPDATED
Requesting service from City Service Center	Requesting service from outside city vendors	Response to Nitrification Inhibition	Eye Protection Policy	Hazardous Waste Accumulation
Fire Alarm System Overview UPDATED	Supervisory/Trouble Alarm Response	SDS - Understanding / Location / Researching	DAFT 3 & 4 Gravity Bottom Sludge Removal Procedure UPDATED	Hazard Communication and Globally Harmonized System Training Video
IE10 Incompatible Browser Help	Heat Illness Prevention and Sun Protection Training	2013 Designated Provider Form	Centrifuge Offsite Rebuild Removal and Installation of Centrifuge Bowl	

Can't find what you're looking for? Click on "Search" in the upper right corner, select what to search and type in a keyword or two.

CONTENT CREATION

Author

- Interviews SME
- Collects information
 - Photos
 - Videos
- Enters information into InfoNet Template
 - Step by step instructions
 - Associated documents and links
- Document field tested
- Schedule for KMT Review




CONTENT CREATION

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STEP	
4.0 Scan	

RESPONSE	
	<p>The Sample location and Bottle need to be scanned into the PDA; along with the sample's volume. Important –Scanning is required for the samples Chain of Custody. An electronic signature; along with a time, date and volume of the sample are recorded.</p> <div><div><div>1. Scan the Location Barcode</div><div>2. Scan the Barcode on the Bottle</div><div>Volume of 100</div><div>Scan or Enter Volume (100ml)</div></div></div>

⏮ DELETE ⏭

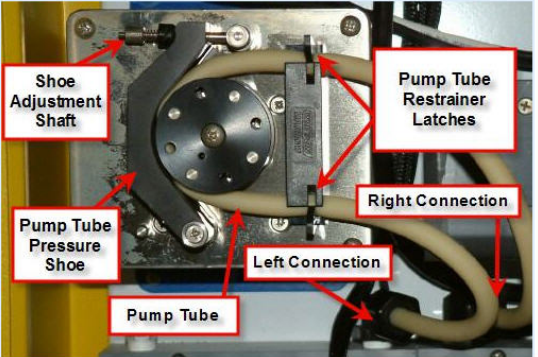
FINAL PRODUCT: STANDARD OPERATING PROCEDURES

Final SOP

Upper portion of SOP includes

- Description
- Photo
- Resources required
- Links to other documents

ChemScan Pump Tube Replacement

Equipment Number	AE/AIT-12-120, AE/AIT-12-701
PM Number	OPS-CHEM PMP RPL 1M
Author	Greg Farmer, John Wright
Review Date	8/09
Area	Denitrification Pipe Gallery
Description	<p>Other than periodic tube replacement this peristaltic pump does not require any regular service or lubrication. It is absolutely necessary that the pump tube be changed periodically to prevent <u>excessive tube wear</u>, which may lead, to eventual tube rupture and leakage.</p> <p>Always use tubing of the exact same type, size and length as originally supplied with the pump to ensure proper operation.</p> 
Resources Required	<p>Replacement Pump Hose</p> <p>Order more hose when only one hose remains in the door hose holder</p> <p>ChemScan Part # APT0022 \$82 for set of 3</p>
Related Documents	ChemScan Manual

CONTENT APPROVAL

Review new SOP at KMT meeting

- Approve or reject

Set initial one year review

- Create / schedule PM work order

Promulgate

- Internal newsletter, front page of InfoNet

Provide / track training

■ DAFT FLOAT SLUDGE SAMPLE PROCEDURE

The master document resides on the secure InfoNet drive. Printed copies are uncontrolled copies.

Document Number:	DAF_SOP_001	Revision Number:	01	WO	163489
Effective Date:	02/12	Last Revision Date:	02/12	Next Review Date:	02/13
Prepared by:	J. Wright	S.M.E.	J. Grengs	Approved by:	KMT

CONTENT MANAGEMENT

**PM issued for review
by SME/Author**

- **Review any Notes**
- **If major changes made, place on KMT agenda, if not, set new renewal period**
- **Permit, policy, safety stay at 1 year review interval**

CONTENT NOTES

3/26/2013 by Jan Grengs - [Edit](#)

Note: The following notes are for annual review of Float sludge sampling SOP. Suggested changes are underlined.

Under DESCRIPTION, first bullet should probably read Sample is collected every 4 hours on the even hours....

Under OPERATING GOALS, - To ensure atimely, representative sample is taken.

Under RELATED TASKS, Please add Subnatant Sample since subnatant sample should be taken at same time as float sample.

Under Step 4.0 second line under Response, perhaps the word sample should be possessive case, i.e. samples.

3/27/2013 by Greg Farmer - [Edit](#)

John Wright will review and incorporate comments into SOP

3/27/2013 by John Wright - [Edit](#)

I have addressed the first and forth note from Jan.

Number 2 is redundant, now that I addressed number 1.

Number 3 is a good idea, but the SOP does not exist.

This SOP does not need KMT review.

3/27/2013 by Greg Farmer - [Edit](#)

Set next review for 3 years please

CONTENT MANAGEMENT

PM issued for review by
SME/Author

Review any Notes

If major changes made,
place on KMT agenda,
if not, set new renewal
period

- Permit, policy, safety stay
at 1 year review interval

KMT committee meeting March 21, 2012 Denite 10am – 12pm	
Meeting called by: Greg Farmer	
Attendees: Brian Pritekel; Karen Bish; Mark Trusty; John Wright; Brenna Durkin; Kevin Hill; John Burgess;	
Agenda Topics	
1. LAST MONTH MTG	
Wright Under Development / SOP V1 / Hibon Blower Inlet Filter Differential I. Leonard noted that Mike Boyett has removed this weekly PM	Operations should visually check this once a day. Kevin will put on Readings and Rounds. Moved to SCT, Blower, SOPS and approved with next review 10/16
Sampling / Final Effluent Sample Room / Cleaning Final Effluent Sample Troughs b. Note that you can use cleaning device of choice, is this done daily? Need to put original size value to drain, everyone does this differently so modify to clean around only.	Make into two different SOPs: Daily cleaning troughs and Rotating Troughs. John Wright to change picture in step #3 and work on both SOPs. Brenna to put on Scan route for daily cleaning of troughs.
Filter Manual Backwash w/o HMI	JW to investigate Step 2 Surge Value operation in Auto when it should be closed
WTW Dissolved Oxygen Probe Calibration Missing Videos on Step 2 and 4	Karen will make new videos
Spill Trailer New SOP for Spill Mats Annual PM	JW Get with Leonard to Create SOP
3. Review completed SOPs and O&M.....Greg Farmer	
KBISH	
<ul style="list-style-type: none">Time Paced Automatic Sampler (ISCO 3700), WO 137151, Added a section on special samples, took new photos etc.TF Flood Procedure, WO 131288, made corrections to section 5.0 drain sequence. We now have the 12 inch drain valves to use on TF 1 & 2 so changed the SOP to indicate this as it is the proper procedure.	
BPRITEKEL	
<ul style="list-style-type: none">Spill Trailer Quarterly PM, WO 38487	
JWRIGHT	
<ul style="list-style-type: none">DAFT Float Sludge Sample Procedure, WO 136677, SOP was released in Feb due to biosolids NBP audit need. SOP was reviewed by management and operators prior to release. OKMT to review and comment if necessary.	
<ul style="list-style-type: none">SBS Pump Hose Leakage, WO 139755 New Step 2.0 How to reset the leak detector, issue with HMI—alarm doesn't show, LR writing up. Major Changes	
<ul style="list-style-type: none">Distributor Arm Lubrication, WO 137144, Would not recommend Flush and Brush being performed at the same time. Discuss with KMT. Step 1.3 Location Drawing Link is not working. Description: The NTFs normally receive a combined flow of 54 mgd has changed. This effects step 1.0. Also made changes to the flush and brush SOP, to match. (See Notes)	

CONTENT MANAGEMENT

Infor EAM

LEWWTP ASSET MGT SYSTEM, LROBB, Org 90, PRODUCTION

Requests/Generate | Reports | Work

Work Order: 163489 KMT Document Review DAFT Float Sludge Sample Procedure SOP

Organization: 90
Status: Scheduled
Equipment: DAF SOP 001

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List View

Record View

Comments

Activities

Book Labor

Schedule Labor

Meter Readings

Parts

Documents

Equipment

Inspections

Work Order Task

Work Order: 163489 KMT Document Review DAFT Float Sludge Sar x

Equipment: DAF SOP 001 DAFT Float Sludge Sample Procedure SOP

Status: Scheduled

Department: OPLE

Type: Preventive maintenance

Priority: Routine

Ranking Code: 4

Sched. Start Date: 02/01/2013

Sched. End Date: 03/02/2013

Created By: BDURKIN

Requested By:

Work Order: 163489 KMT Document Review DAFT Float Sludge Sample Procedure SOP

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List View

Record View

Comments

Work Order Task

Schedule Labor

Meter Readings

Parts

Documents

All Records

Edit

Activity	Task Description	Task Instructions
10	KMT Document Reviews	Please review and update as necessary. Please note any changes needed.

Rejection / Cancellation Details

Scheduling

Activity

Assigned To: JGRENGS

Supervisor: GFARMER

Standard WO:

Custom Fields

Primary Location:

Sublocation Level:

Location Notes:

Trade: SUPER

Total Estimated Hours: 1

People Required: 1

Hours Remaining: 0

Project - Budget: 1701-0010-01 1701-00

Activity Start Date: 02/01/2013

Activity End Date: 03/02/2013

Task Instructions: KMT REVIEW

Material List:

Route:

PM Code: KMT REVIEWS

TRACK, MEASURE AND REVIEW

Infor EAM – Asset Management System

Using the theory that knowledge is an asset, the KMT Team determined the best way to track SOP development, staff involvement, and SOP review, is to use the Enterprise Asset Management System

- **Report staff time and costs**
- **Ensure regular Review**
- **Track continuous improvement**
- **Report asset costs**

TRACKING / REPORTS

Asset Costs

Labor

Infor EAM		WO Cost Summary							INFOR®
Equipment		No. of Work Orders	Labor Hours	Services	Labor	Material	Direct Material	Tools	Total
A	DAF SOP 001 DAFT Float Sludge Sample Procedure SOP	2	15	0.00	419.82	0.00	0.00	0.00	419.82
		Work Order							
		136677	13.25	0.00	371.01	0.00	0.00	0.00	371.01
		163489	1.75	0.00	48.81	0.00	0.00	0.00	48.81
		2	15	0.00	419.82	0.00	0.00	0.00	419.82

Equipment Work History

Selected Equipment: DAF SOP 001

Report data from , -01-Jan through 2,-20-Aug

Equipment		Internal Labor		External Labor		Stock Items		Direct Items		Total	
DAF SOP 001		\$419.82		\$0.00		\$0.00		\$0.00		\$419.82	
Work Order	Description	Department	Equipment	Equipment Description	PM Code	Status	Internal Labor Cost	Outside Labor	Stock Items	Direct Items	Total Cost
136677	KMT - Create SOP for DAFT Float Sludge Sample Procedure DAF_SOP_001_01	OPLE	DAF SOP 001	DAFT Float Sludge Sample Procedure SOP		C	\$371.01	\$0.00	\$0.00	\$0.00	\$371.01
163489	KMT Document Review DAFT Float Sludge Sample Procedure SOP	OPLE	DAF SOP 001	DAFT Float Sludge Sample Procedure SOP	KMT REVIEWS	C	\$48.81	\$0.00	\$0.00	\$0.00	\$48.81
Summary							\$419.82	\$0.00	\$0.00	\$0.00	\$419.82

SOP REVIEW HOURS

KMT HOURS

WO DESCRIPTION	WO#	DATE WORKED	EMPLOYEE	HOURS WORKED	
KMT - Annual Review SOP Sodium Bisulfite Chemical tanks P-trap Fill Procedure	79462	1/7/10	GFARMER	0.25	
KMT - Annual Review Taking Barscreen Offline SOP in new Infonet	75004	11/18/09	KHILL	0.25	
BUILDING 06 HEADWORKS Total Hours					0.75
KMT - Annual Review SOP for Hach Hardness Kit Use	77234	12/2/09	KBISH	0.25	
	77234	12/3/09	KBISH	0.5	
BUILDING 06 Headworks Total Hours					0.75
KMT - Annual Review SOP Filters Manual Backwash with HMI	77233	12/2/09	KBISH	1.33	
KMT - Annual Review SOP for Hibon Blower Inlet Filter Differential	75006	11/10/09	JWRIGHT	0.5	
BUILDING 08 BLOWER BLDG Total Hours					1.83
KMT - Annual Review SOP for Odor Control System Sample Ports	77232	1/7/10	MTRUSTY	0.75	
BUILDING 09 SSPS Total Hours					0.75

TRAINING

Training

- Formal training for New SOP's
- Training on use of InfoNet



CONTINUOUS IMPROVEMENT

Recent Innovations

Revised SOP templates to conform with ISO standards


Vendor Address Book

Readings and Rounds

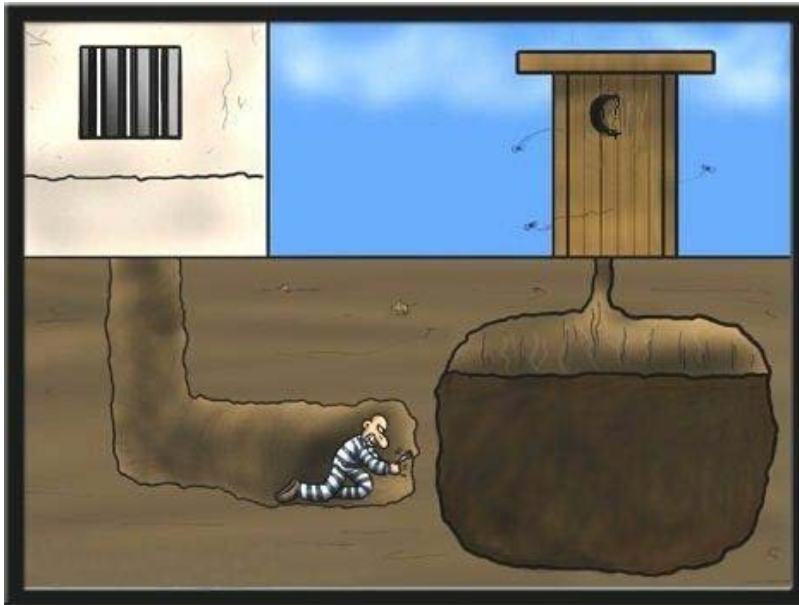
Process Objectives



TAKE AWAYS

- **Defined Systems and Procedures – Clearly defined processes and systems**
 - **Assigned roles and responsibilities**
 - **Relevance – Information must be relevant, pertinent, up-to date and accessible**
 - **Organizational knowledge is an asset**
 - **Asset management software can be used to manage knowledge assets**
 - **If not maintained knowledge will breakdown due to inaccuracy and missing information.**
 - **Management Support – Ensure commitment to an on-going process**
 - **Keep it Simple**
- 

QUESTIONS?



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