



Airbus UK Ltd
Environment Team
Chester Road
Broughton
Chester
CH4 0DR

22nd July 2015

Our reference: **NRW/EPR/10/2015**

Beth Voice
Regulatory Officer
Natural Resources Wales
Chester Road
Buckley
CH7 3AJ

Re: IR/15/01 TE3 Elevated Chromium – Completed Part A and Part B reports

Dear Beth,

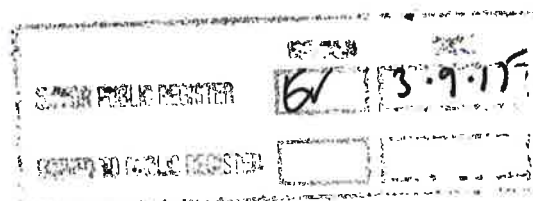
As promised in my e-mail, please find attached

- A signed copy of the Part A and completed Part B report
- A copy of the Practical Problem Solving (PPS) analysis for the incident

Should you have any further questions please do not hesitate to contact me.

Yours sincerely,

Andy Denton
Environment Officer
Airbus Operations, Broughton
Tel: 01244 524252



IR/15/01

PART A

Permit Number	BM39651A (Variation NP3235MQ)
Location of Installation	Airbus UK, Chester Road, Broughton, Chester CH4 0DR
Time and date of detection	01/04/2015 @ 16:00

(a) Notification requirements for any malfunction, breakdown or failure of equipment or techniques, accident, or fugitive emission which has caused, is causing or may cause significant pollution

To be notified within 24hours of detection	
Date and time of the event	
Reference or description of the location of the event	
Description of where any release into the environment took place	
Substance(s) potentially released	
Best estimate of the quantity or rate of release of substances	
Measures taken, or intended to be taken, to stop any emission	
Description of the failure or accident	

(b) Notification requirements for the breach of a limit

To be notified within 24hours of detection	
Emission point reference / source	Trade Effluent TE3
Parameter(s)	Total chromium
Limit	500 ug/l
Measured value and uncertainty	507 ug/l
Date and time of monitoring	26/03/2015 @ 10:10
Measures taken, or intended to be taken, to stop the emission	See Part B
Time periods for notification following detection of a breach of limit	
Parameter	Notification period
Total chromium	5 working days

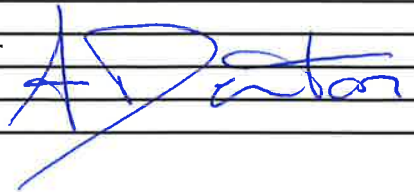
(c) Notification requirements for the detection of any significant adverse environmental effect

To be notified within 24hours of detection	
Description of where the effect on the environment was detected	
Substance(s) detected	
Concentrations of substances detected	
Date of monitoring / sampling	

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PART B

Any more accurate information on the matters for notification under Part A	As Part A
Measures taken, or intended to be taken, to prevent a recurrence of the incident	See attached Practical Problem Solving (PPS) analysis
Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment which has been or may be caused by the emission	n/a
The dates of any unauthorised emissions from the installation in the preceding 24 months	07/08/2014 23/12/2013

Name	Andrew Denton
Post	Environment Officer
Signature	
Date	22/07/2015

Description of Root Cause(s)

Stringers Effluent Plant is a continuous effluent process with a batch discharge system. This includes 3 sentencing tanks (A,B or C). Upon filling of a Tank the treated effluent is then tested using Lab Method 145 to detect concentrations of Total Chromium. Provided a result of < 375ppb (internal agreed action limit) then the effluent is discharged until the selected tank (A,B or C) is empty. A weekly sample (Alconfort) is taken during this activity and on the 28th March Tank A was analysed by Veolia with a result of 155ppb. The Alconfort sample taken 2 hours later returned a result of 507ppb 7 days later. The existing method of sampling is from a 1m height of the tank level with the tank being 2.5m in height. The sample taken by Airbus is not a representative sample as solids can settle below the sample point. Also the tank(s) do not have internal agitation therefore no homogeneous mixture is present and solids can settle out over a period of time. The sand filtration vessel prior to the sentencing tanks is designed to remove potential solids carried over upstream of the process and if not cleaned effectively can carry itself into the sentencing tanks. Lastly there has been no dual sample taken to verify offsite sampling and prove the result. More importantly a dual sample would enable the Level 1 investigation to be completed if the Airbus dual sample analysis result was above our own internal action limit. It would also enable us to identify the immediate root cause effectively rather than up to 7 days after the event when the process is once again stable.

Date action plan defined	07/04/15	For the Action plan consider:- Physical Factors (Error proofing tools and techniques), Process Factors (SOP's), Human Factors (Skills/Training Matrix), Detection factors to ensure such a problem cannot reoccur					
Action plan & Results for Root Cause(s) Elimination	Who	Target date Closure date	Status	Escalation			
Invest in internal sentencing tank(s) agitation to ensure a homogenous mixture NO FURTHER ACTION NECESSARY AS IT CAN BE DEMONSTRATED THAT THE CONTROL MEASURES NOW INTRODUCED NEGATE THE NEED FOR AGITATION.	PB	Week 25 Week 28		N/A			
Process confirm daily that Sand Filtration System flush is performed	MR	Week 16 Week 17					
Add new sampling method (Pre and Post) to PSW 8046 until tank agitation is installed. NOTE - Sampling method to resume 'As Is' once agitation is made available.	MR	Week 17 Week 18					
Update CPR 7328 to incorporate Airbus Sampling regime and dual sampling of Acontrol (NRW) reported samples	AD	Week 20 Week 21					
Install remaining Sand Filter to enable duty/standby arrangement and prevent ingress of solids into sentencering tanks. Software to be automated and system flush to be enabled once per sentencing tank fill.	MD	Week 17 Week 17					
Create a PPM to inspect tank internals and bolt onto existing cleaning regime within Chemical Treatments	MR	Week 17 Week 18					

	Yes	No
11 Consideration (link to other processes)	☒	☒
Is the solution applicable in other cases?	☐	☒
Has error proofing been performed (Poka-Yoke)?	☐	☒
Is the documentation up to date (i.e. SOL, Control plan, FMEAs, Single Point Lessons...)?	☐	☒
Doc Ref.: PSW 8097		
Has the problem and corrective actions been communicated to relevant stakeholders?	☐	☒
Have you considered using operational surveillance/process confirmation for action verification?	☐	☒

[illegible]

1	Date (PPS start date)	07/04/15		REF/Trigger (e.g. NC, MISP, part, ...)	
	Reoccurrence	Yes	☒	No	☐
		Originator Mark Roberts (e.g. Technical or Team leader)			
Program		Area/ Location		Maintenance	Facilitator (optional)
					Owner
					Tim Griggs
6 Prioritisation Score/ Assessment 12					

Impact (✓ box and add details)

S ☒ 3.2.2.Q ☐ C ☐ D ☐ P ☐

What is the part/process affected? What is the problem/defect and the gap to the standard?	Stringers Effluent Plant
Where does the problem occur? Where the defect has been created? (e.g. on the object/on the process)	Stringers Effluent Discharge Point TE3
When did the problem occur? When the defect has been created?	26th March at 10:10 am
Who found the problem?	Alcontrol (Off site analysis of effluent)
How did it happen? (e.g. context description) How has it been detected?	During discharge of Sentencing Tank A. Analysis result of 507ppb identified.

4 Problem Description/Topic (i.e. a detailed description of one object and one defect compare to a reference point/spec)

Alcotest TE3 weekly sample of Total Chromium returned an analysis result of 507ppb from Sentencing Tank A.

Aibus Laboratory Sample of Tank A returned a result of 155ppb

Sample taken by Aibus was at 08:00 hrs. Alcotest Sample was taken at 10:10 hrs.

Level 1 root cause investigation not performed as plant condition was deemed stable according to < 375ppb action limit imposed.

Who	When	Status	Escalation
MR	07/04/15		
MR	07/04/15		
AD	13/04/15		
MR	07/04/15		
AD	09/04/15		
MR	08/04/15		

a) Immediate containment action/Result (Current product)

Immediately sample at end of Tank discharge via TE3 for treated effluent waste disposal. Enable data to be built regarding pre and post discharge and expose possible surface contamination issues.

Drain TE3 tank and sentencing tanks to enable inspection and clean.

Recall sample from Alconrol to analyze within Airbus Laboratory to prove correct value of result and cross reference against Airbus Known standards

b) Customer Protection action/Result for the impacted products

Sample and analyze Compact Clarifier (Upsream) prior to selection of filling sentencing tank. (Process is upstream and should identify maximum Total Chromium concentration that can fill any 1 sentencing tank)

All Alconrol weekly samples to have a duplicate sample taken and handed to Airbus Laboratory to analyze and cross reference Alconrol sampler result. EHS to contact Vedali prior to each sample. Result to be logged on Shop Floor Online

Back wash Sand Filters every 12 hours and record on daily PPM check sheet.

7a Root Cause Analysis - "5 WHY tool"

Why?	Failed Total Chromium consent limit for TE3 effluent waste discharge.
Why?	Weekly sample of TE3 waste stream returned a result of 507ppb.
Why?	Treated water discharging from Sentencing Tank A contained a higher content of Total Chromium than what was analysed by Veolia using Airbus ICP method (Lab instruction 145).
Why?	Airbus sample taken from Sentencing Tank A was not representative of Total Chromium content.
Why?	Existing method of sampling once per sentencing tank and at mid-height (1m) not accurate to determine correct Total Chromium concentration. Displacement of solids rest below sample point with no tank agitation to enable a homogenous sample to be taken.

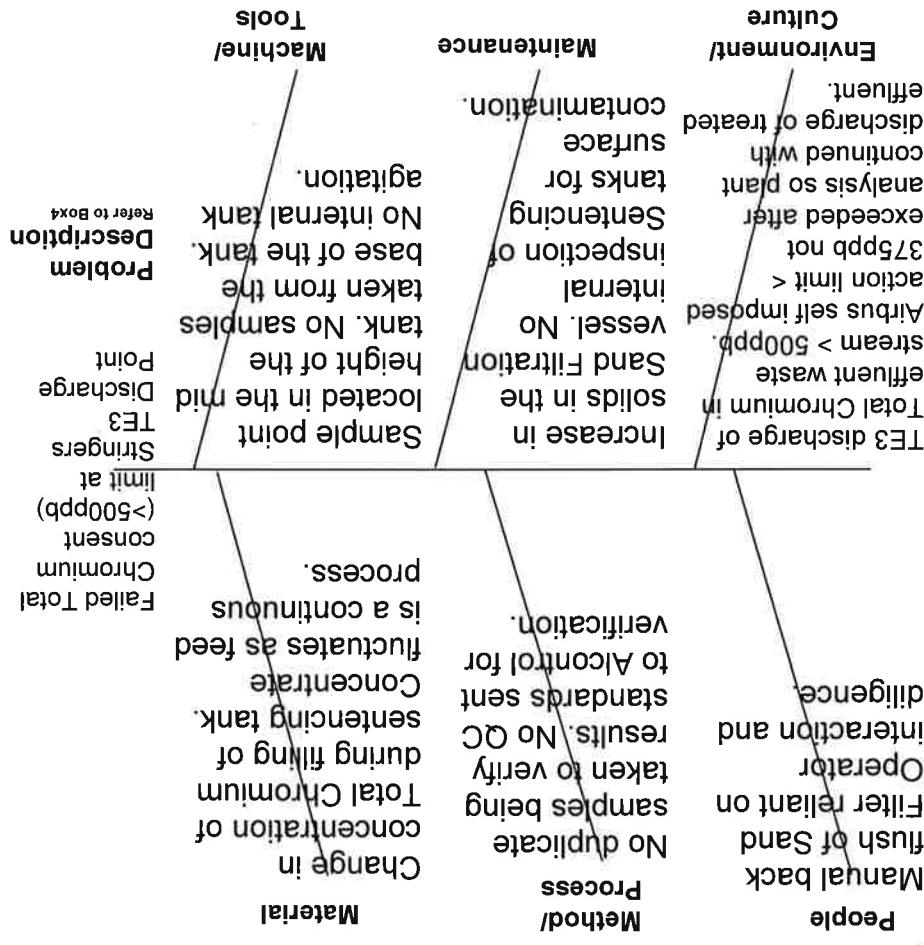
If further analysis is required or for multiple root cause analysis you may use Ishikawa tool and/or 5 why's tree tool and template

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Action Plan/Results to confirm Root Cause(s)	Who	When	Status	Escalation
Send Alcontrol a known standard made up by Airbus Materials Laboratory to verify accurate results. Sample will be supplied labelled as TE3 sample.	AD	Week 15	●	
Inspect each of 3 sentencing tanks to identify if there are any surface contaminants or internal collection areas to enable an agitation method to be introduced.	MR/ PB	Week 15	●	
			⊕	
			⊕	
			⊕	
			⊕	
			⊕	
			⊕	

7b

Root Cause(s) Analysis - "Ishikawa tool"



COMPLEMENTARY INFORMATION

Please add here any further information you feel appropriate to the root cause analysis e.g. drawings, documents, analysis...

Lab Daily Effluent Testing Log	Daily record of analysis results
ShopFloor Online	Database for analytical results
PSC 0401 - SMC Daily Outfall Measurements	Procedure for recording Total Chromium results and Level 1 Investigation
PSW 8097 SMC Effluent Plant Operations	Plant Operating Manual
Lab Instruction 145 for analysis of Total Chromium in effluent waste stream.	Lab procedure for Analysis of Treated Effluent