Wilson, Tabatha

From: Torrence, Rufus
Sent: Friday, June 21, 2013 10:35 AM
To: Jones Chuck (Chuck.Jones@danfoss.com)
Cc: Wilson, Tabatha
Subject: AFIN 10-00102 ARP001040 Danfoss Site Visit for Compliance Assurance: Inspection
Attachments: DFS Insp 20130515.doc; DFS Lab Report.doc

ADEQ

ARKANSAS
Department of Environmental Quality

June 21, 2013

Chuck Jones, EHS Manager
Danfoss, LLC
One Scroll Drive
Arkadelphia, AR 71923

Re: May 15, 2013 Site Visit for Compliance Assurance: Inspection
(Tracking No. ARP001040 AFIN 10-00102 AR0020605)

Dear Mr. Jones:

Part of ADEQ responsibility to EPA is to inspect industries regulated by categorical pretreatment standards (40 CFR Part 405 – 471) on a periodic basis. These industries are referred to as Categorical Industrial Users (CIUs) if they discharge the regulated wastewater into the local Publicly Owned Treatment Works (POTW). Danfoss (DFS) has processes (Coating-Phosphate/Zirconium &Passivation) in the Arkadelphia facility that are regulated by 40 CFR Part 433 and discharges to the City of Arkadelphia POTW. Therefore, DFS is a CIU. In accordance to 40 CFR 403.12(e), DFS must submit periodic reports to the Control Authority (ADEQ or Department) and in accordance with 40 CFR 403.8(f)(2)(v) be inspected by the Control Authority at least bi-annually. The

Department appreciates DFS taking the time on Wednesday (May 15, 2013) to show the ADEQ Engineer/Inspector (Rufus Torrence) the facility in Arkadelphia.

The inspection consisted of inspecting the shop operations (constructing scroll compressors), acid tanks and wastewater sampling. Danfoss rolls metal sheets to form the shell of the compressor (this operation is not regulated). Nonetheless, during the walk-through, the inspector noticed that DFS has three possible 40CFR433 core operations. In addition Parco/Phosphate conversion coating operation, the modified seven stage washer (Zircobond/Zirconium Coating) and the rust removal (passivation) may also be core operations. Core operations are the key processes in determining the applicability of the 40CFR433 category.

DFS has no open floor drains in the plant which connect directly to the POTW. Wastewater enters open floor drains and all wastewater is pumped to the pretreatment system which consists of pH adjustment/floc. The treated wastewater is sampled at the end of the pretreatment system, metered and released to the POTW.

Danfoss limits have been adjusted to account for dilution from the stormwater which Danfoss pumps into the pretreatment system; therefore, Danfoss' limits are not shown in 40CFR433 as they have been reduced by using the Combined Wastestream Formula (CWF) shown in 40CFR403.6(e); for example, the zinc limits are 2.573 & 1.459 mg/l. If DFS has any questions about the procedure, let the Department know.

According to 40CFR433.12(a) DFS may submit a Toxic Organic Management Plan in lieu of sampling for TTOs; presently, DFS is required to sample for the 110 toxic organic, seven metals and total cyanide for each semi-annual report. DFS may review the EPA Guidance Manual for Implementing Total Toxic Organics Pretreatment Standards by accessing this web site:

http://www.epa.gov/npdes/pubs/owm0021.pdf

DFS can find an example of a Toxic Organic Management Plan in Appendix D of this manual.

During the inspection, the inspector and DFS split wastewater samples of the regulated wastewater that will enter the local POTW. The ADEQ lab analysis is attached. The wastewater complies with the limits in 40 CFR 433.

DFS must continue sampling (at least semi-annually) all regulated wastewater for all 40 CFR 433 parameters before it enters the POTW.

The Department appreciates DFS' continued efforts in periodic reporting.

If you have any questions or concerns, please contact the Department at (501) 682-0626 or torrence@adeq.state.ar.us .

Sincerely,

Rufus Torrence,
ADEQ Engineer/Inspector

Attachments: ADEQ Lab Analysis
ADEQ Inspection Report dated April 18, 2012

Pretreatment Industrial Inspection

Facility Information

Facility Name: ***Danfoss, LLC***	Site Address: ***One Scroll Drive***
	Arkadelphia, AR 71923
Signatory Authority (Name & Title): ***T. Paul Dean, General Manager***	
Phone: ***870-246-0700***	Mailing Address (if different):
Fax:	***Same***
Address: ***Same***	Corporate Owner Name and address (if applicable):
Contact Person (Name & Title):	***Member of the Danfoss Group***
Chuck Jones, Env Health and Safety Mgr.	***Nordborgvej 81 6430 Nordborg Denmark***
Phone: ***870-246-0714***	Phone: ***+45 7488 2222***
Fax:	Fax: ***+45 7449 0949***
e-mail: **chuck.jones@danfoss.com**	Corporate CEO: ***Neils B. Chriestiansen***
	e-mail:
Facility Permit # ***ARP001040*** AFIN ***10-00102***	Last Inspection Date: ***April 18, 2012***
POTW (City) IU discharges to: ***Arkadelphia Water Dept (Utility)***	POTW's NPDES # ***AR0020605***
Industrial Classification: ☒ Categorical	☐ Significant
If Categorical, list which CFR #(s) the facility is subject to: **40 CFR 433**	

Table of Contents

Comments : ***This facility has three possible core processes: Parco (Phosphatizing-Coating), Zircobond (Zirconium Coating) and Rust Removal (Coating).***

Inspector's Name (Print): ***Rufus Torrence***	Signature:
IU Rep's Name (Print) ***Chuck Jones***	Signature: ***Not Applicable***
Date and Time Inspection Ended: ***May 15, 2013 @ 12:15 pm***	

I. Summary of Inspection

A. Inspection and Objective (Complete Before Inspection)

☐ Permit Renewal	☒ Annual	☐ Spill/Slug	☐ Unscheduled
☐ New Construction	☐ Noncompliance	☐ Follow-up	☐ Complaint

Inspection Objective(s): ***Compliance Assurance***

Checklist of items to be reviewed and/or visually inspected:

☒ Pre-inspection Meeting	☐ Permit Conditions	☐ Safety Concerns
☒ Process Inspection	☒ Pretreatment Process	☐ TOMP*
☒ Chemical Storage	☒ Discharge point(s)	☐ Spills/Slug Control Plan**
☒ Records Review	☐ RCRA information	☐ Process/Flow/Pretreatment Schematics
☒ IU sampling procedures	☐ Flow/pH Meter(s)	☐ Calibration Records
☐ MSDS Inventory List	☐ New MSDS	☐

Comments: ***Danfoss Scroll has elected to sample for TTOs in lieu of submitting a TOMP to ADEQ.***

*****A Spills/Slug Control Plan appears unnecessary at this time.***

B. Inspection Analysis

Were there any deficiencies/violations identified and noted during the inspection? ☐ Yes ☒ No

Provide a brief narrative of deficiencies/violations or other concerns in the following areas:

Records Review

Process Area(s)**:**

Pretreatment System

Self Monitoring Procedures

Diversion/Sewer Meters

Spill/Slug Control Plan

Sampling Point

Chemical Storage

II. Pre-Inspection Meeting

A. General Information

Date and Time Inspection Started***: May 15, 2013 @ 10:00 am***	SIC code(s): ***3585***	
IU Reps/Titles	Control Authority Reps/Titles	
Chuck Jones, EH&S Manager	***Rufus Torrence, Engineer***	
End product(s): ***Scroll A/C compressors***	Approx. # of units produced: ***1000/day***	
Days of Operation: ***7 days/week***	Days of Production (if different): ***same***	
Hours of Operation: ***24 hours/day***	Hours of Production (if different): ***same***	
Shift 1, hrs.: ***8:00 am*** to ***5:00 pm***	Shift 2, hrs.: ***N/A***	Shift 3, hrs.: ***N/A***
# of Employees: ***197 (as of May 2013)***	Peak Mos.:	"Off" Mos.:

Are there any scheduled plant shutdowns? Yes ☒ No ☐ N/A ☐ If yes, when? ***July & December***

Are there designated plant clean-up days? Yes ☐ No ☒ N/A ☐ If yes, when?

Is the facility currently in compliance with all pretreatment reporting requirements and limits? Yes ☒ No ☐

If No, explain:

Are there any Special Entry Procedures for the Discharge/Sample point locations? Yes ☐ No ☒

If Yes, explain:

Are there any Safety Concerns or Identified Hazards that the inspector should be aware of: ☐ Yes. ☒ No

If Yes, explain:

Has there been any changes since the last inspection regarding the following items:

Plant/flow/process layout? Yes ☐ No ☒ If yes, obtain copy of updated schematic for facility file.

Processes? Yes ☐ No ☒ If yes, explain:

Production Levels? Yes ☐ No☒ If yes, explain:

Raw materials? Yes ☐ No ☒ If yes, explain:

Flow rates? Yes ☐ No ☒ If yes, explain:

Are regulated and non-regulated wastestreams combined?	Yes ☒	no ☐	
Prior to Pretreatment System?	Yes ☒	no ☐	N/A ☐
If Yes, was the CWF used to calculate limits?	Yes ☒	no ☐	
Prior to connection to the POTW sanitary sewer?	yes ☐	no ☐	N/A ☒
At connection to sanitary sewer?	yes ☐	no ☒	N/A ☐
Production and flows verified for Production-Based Standards?	yes ☐	no ☐	N/A ☒

What is the current avg. production rate and process flow? ***Not Applicable***

Is the prod. rate or flow substantially different (+/- 20%) from those used in calculating limits? yes ☐ no ☐ N/A ☒

Not Applicable

B. Facility Permits		
Permit Type	Permit No.	Expiration Date
Air	***1223-A***	***Voided***
RCRA	***Not Applicable***	***N/A***
NPDES	***ARR00B641***	***Active***
Other	***ARR00A240***	***Voided***

C. Additional Comments
(Note which section or attachment comments are regarding)
1. ***Danfoss has both ISO 9001 and ISO 14001 Certification***
2. ***The Parco process is actually a phosphate conversion coating process that uses phosphoric acid,***
nitric acid and nickel nitrate. This coating provides lubricity to the moving parts during start-up.
3. ***The seven stage phosphate washer recently was modified to produce a "Zircobond" coating. The process***
produces a zirconium coating.
4. ***Danfoss also receives cast steel parts which are machined on site to create parts for the compressors. Danfoss receives round steel stock in eight-foot lengths which are cut to length and machined to form "eccentric" shafts for the compressors. Danfoss purchases the stator and rotor from outside vendors. Danfoss has automated assembly lines which piece together the parts for the compressors. The stationery scroll and orbiting scroll are washed in alkaline and phosphoric baths. Furthermore, the steel tube housing is also washed in an alkaline bath prior to painting. Danfoss ships the finish product to the two owners (Carlyle/Carrier and Bristol/York…sold to Danfoss Group*****).***
5. ***Copeland is Scroll Tech main competitor; the compressors are sold to York (about 60%), to Carrier (about***
20%) and 20% to others.
6. ***In addition to the Parco and Phosphate Washer, Danfoss is employing a "Derust" operation***
which uses Citric Acid. The Parco and Phosphating are core processes; the Derust may also be a core process.

Attachment A: Industrial Process(es)			
List process(es) generating wastewater. Note if it's categorical (federally regulated w/pretreatment limits) or not			
1. ***Ransohoff (Soap) Wash***	Yes ☒ No ☐	4. **Derust (Citric Acid)**	Yes ☒ No ☐
2. ***Parco Coating (Core Process)***	Yes ☒ No ☐	5.	Yes ☐ No ☐
3. ***Zircobond Coating (Core)***	Yes ☒ No ☐	6.	Yes ☐ No ☐
Were processes visually inspected?	Yes ☒ No ☐ N/A ☐		
Brief description of process(es):			
Ransohoff is a hydroxide soapy wash to remove oil, grease and other contaminants and is a 40 CFR 433 "ancillary" operation.			
Parco is a phosphate conversion process that falls under 40 CFR 433 as a "core" operation.			
Zircobond Coating is performed in the old "phosphate"seven-stage washer and also is a 40 CFR 433 core			
operation. The principle is based on EPD (Electrophoretic Deposition).			
General observations of facility's indoor housekeeping: ***Excellent***			
General observations of area outside facility's building: ***Excellent***			
Check all sources of wastewater being discharged into the City's collection system. Indicate avg. gal/day, measured (M) or estimated (E). If batch (B) discharged, list frequency and volume (1000 gal/month, e.g.).			
☐ Process Rinse Overflows	☐ Equip. Cleanup	☒ Floor Cleanup	☐ Spent Bath Solutions
☒ Product Cleaning	☐ Forklifts Maint./Wash	☐ Tank Dragout	☐ Air Pollution Devices
☐ Boiler Blowdown	☐ Spent Rinse Tanks	☐ Equipment Coolants	☐ Non-Contact Cooling Water
☒ Stormwater	☐	☐	☐
List Major Raw Materials and Chemicals used:			
Cast parts machined to form "scroll" fixed and orbiting parts. Steel rods are imported from China.			
Acids (phosphoric, nitric, etc.) for cleaning and coating.			
Lubricating oils for moving parts in compressor			
Check Waste Stream Pollutants of Concern from Process(es)			
☐ BOD	☐ CN^-	☒ Metals (List) ***Cd,Cu,Cr,Ni,Pb,Ag & Zn***	☐ Solvents (List)
☐ TSS	☐ Cl_2		
☐ O&G	☐ S^-		
☐ pH	☐		
Are there floor drains in the Process area? ☐ Yes ☒ No If yes list number and the location of all floor drains:			

Attachment B: Pollution Prevention (P2) / Recycling Activities		
Does the facility have a written P2 Plan?	Yes ☐	No ☒ ***But documentation is pending***
Does this facility practice P2?	Yes ☒	No ☐ ***In practice, but system still under development***
Environmental Management System in place?	Yes ☐	No ☒ ***EMS is being developed for ISO Certification***
ISO Certified?	Yes ☒	No ☐ ***ISO 9001 & ISO 14001***
Written Standard Operating Procedures?	Yes ☒	No ☐
Explain:		
Preventative Maintenance Program	Yes ☒	No ☐ (hydraulic systems, valves, pumps, etc)
Explain:		
Water Reuse:	Yes ☐	No ☒
Explain:		
Cost Accounting to Track Savings:	Yes ☒	No ☐
Explain:		
Inventory Control / "Green Purchasing":	Yes ☒	No ☐ (lean manufacturing/"env. friendly purchasing", etc)
Explain:		
Employee Training:	Yes ☐	No ☒
Explain:		
Spent Solvent Reclamation?	Yes ☒	No ☐
Explain:		
Recycle Paper, Aluminum, Boxes, and Pallets?	Yes ☒	No ☐
Explain:		
Recycle Waste Oil, Solvents, and Lubricants?	Yes ☒	No ☐
Explain:		
Other Activities		
P2 Equipment/Practices in use:		

☐ Overflow Alarms	☐ Aqueous Cleaning Solutions
☐ Fog Spray Rinsing	☐ Countercurrent Rinsing
☐ Dragout Collection Trays	☐ Seal-Less Pumps
☐ Air Jets to Blow Parts Dry	☐ Secondary Containment of Process Solutions
☐ Aqueous Paint Stripping Solutions	☒ Bead Blasting to Remove Paint
☒ Water Soluble Cutting Fluids	☐ Recycle Overspray
☐ In-Process Recycle (Ion Exchange, Reverse Osmosis)	☐ Conductivity Meters
☐ Dead Rinse Tanks	☐ Bath / Rinse Filtration

Attachment C: Pretreatment System

Are wastestreams segregated before pretreatment? ☐ Yes ☒ No ☐ N/A

Are they pretreated prior to discharge to the sanitary sewer? ☒ Yes ☐ No ☐ N/A

Was the pretreatment system visually inspected during this visit? ☒ Yes ☐ No ☐ N/A

Check which of the following are utilized for pretreatment prior to discharge to sanitary sewer:

☐ Dissolved air floatation	☐ Membrane Tech.	☐ Ion Exchange	☐ Biological Treatment
☐ Centrifugation	☐ Flow Equalization	☐ Ozonation	☐ Chlorinating
☒ Chemical Precipitation	☐ Oil/Water Separation	☐ Reverse Osmosis	☐ Grit Removal
☐ Sludge Filter Press	☐ Grease Trap	☐ Screen	☐ Solvent Separation
☒ pH Adjustment	☐ Sand Trap	☐ Sedimentation	☐ Silver Recovery
☐ Belt/Disk Oil Skimmer	☐	☐	☐

Provide Brief Description of Pretreatment System (leaks, cleanliness, equipment not in working order):

System appears to well operated and maintained.

Does the description match the schematic currently on file? ☒ Yes ☐ No ☐ N/A

System Operator(s) Name: ***Darrell Franklin, Carl Wells, Melissa Franklin, James Diemer & Byran Rutherford have Industrial Operator license.***

Greg Newton, Mike Bell, Kenneth Langley, and Greg Conant have Advance Industrial Operator license.

Does discharge permit require licensed operator? ☐ Yes ☐ No ☒ N/A

Is the System Operator(s) licensed by the State of Arkansas (per Reg. # 3?) ☒ Yes ☐ No ☐ N/A

List Name(s) and License classification***: (Listed above)***

Is training provided to the Pretreatment System Operator(s)? ☒ Yes ☐ No ☐ N/A

If Yes, list type and frequency:

Is the discharge from the Pretreatment System? ☐ Batch ☒ Continuous ☐ Combination

If any discharges are batch type or combination, describe the following:

Volume of each batch: gallons per

Describe process from which batch originated (spent bath, e.g.):

Approximate duration of batch discharge:

Meter Type	Calibration Procedure and Frequency	Comments (Totalizer Reading)

Attachment D: Chemical Storage Area(s)		
Does the facility have a designated chemical storage area(s)? ☐ Yes ☒ No ***(Decentralized; see comment below)***		
Was this area(s) visually inspected? ☐ Yes ☐ No ☒ N/A		
Describe Chemical Storage Area(s)	Are there floor drains in this area?	If yes, where does this drain lead to?
1.	☐ Yes ☐ No	☐ Pretreatment ☐ Sanitary Sewer ☐ Storm Sewer
2.	☐ Yes ☐ No	☐ Pretreatment ☐ Sanitary Sewer ☐ Storm Sewer
3.	☐ Yes ☐ No	☐ Pretreatment ☐ Sanitary Sewer ☐ Storm Sewer
4.	☐ Yes ☐ No	☐ Pretreatment ☐ Sanitary Sewer ☐ Storm Sewer
Does the Chemical Storage Area(s) contain any of the following?		
☐ Dikes, Berms for Containment	☐ Plugs for Floor Drains	
☐ Secondary Tanks for Holding	☐ Premix (low) Concentrations	
☐ Alarms	☐ Chain restraints, limited access	
☐ Spills Control Kits for Cleanup	☐ Notification Procedures	
☐ Chemical desegregation within Storage Area	☐ Other	
Chemical Inventory List (MSDS) on file? ☐ Yes ☐ No ☐ N/A		
Were any new MSDS reviewed during the Inspection? ☐ Yes ☐ No ☐ N/A		
If yes, list below:		
Chemical storage comments:		
Presently, Danfoss has "decentralized chemical storage". The decentralized		
location are equipped with berms for spill control.		
Chemical handling procedures (totes, dolly, buckets, hardline, etc):		
Totes, Forklifts,		

Attachment E: Spill/Slug Control Plan	
Does the facility have a Spill/Slug control plan?	☐ yes ☒ no [1]
If yes are the following: 403.8(f)(2)(v)(A-D) requirements in place?	
Is the spill/slug control plan <2 years old?	☐ yes ☐ no ☒ N/A
(A) Describes discharge practices including non routine batch (slug) discharges	☐ yes ☐ no ☒ N/A
(B) Describes storage and handling of chemicals	☐ yes ☐ no ☒ N/A
(C) Procedures for immediate notification to POTW of slug discharges	☐ yes ☐ no ☒ N/A
(D) 1. Describes measures for controlling toxic/hazardous pollutants	☐ yes ☐ no ☒ N/A
2. Describes procedures and equipment for emergency response	☐ yes ☐ no ☒ N/A
3. Describes follow-up to limit damage suffered by POTW or environment	☐ yes ☐ no ☒ N/A
4. Does the facility have Spill/Slug Notification Procedures posted?	☐ yes ☐ no ☒ N/A
5. Are worker personnel provided training in the event of a spill or slug discharge?	☐ yes ☐ no ☒ N/A
If no:	
Does the facility have Spill/Slug Notification Procedures posted?	☐ yes ☐ no
Is it posted in areas where chemicals are used and stored?	☐ yes ☐ no
If Yes how many?	
Are appropriate personnel provided training in the event of a spill or slug discharge?	☐ yes ☐ no
Have there been any non-routine, episodic discharges or chemical spills in the past year?	☐ yes ☐ no
(Briefly Describe, Include Dates)	
Not Applicable	
Was the City notified of these occurrences? ☐ yes ☐ no ☒ N/A	
Visual Inspection of Discharge Lines/Points	
Provide description of manhole condition and flow channel of the following where applicable:	
Sampling / Monitoring Point ***Effluent tank with top spill to POTW.***	
Total Flow Monitoring Point ***Inline flow totalizer on effluent pipe to POTW.***	
Upstream Manhole	
Point of Connection:	

[1] ***Facility has no open floor drains to the POTW so a SPCC for the POTW protection appears unnecessary.***

Attachment F: Self-Monitoring & if CFR 433, TTO/TOMP Requirements

Have Operator (or person collecting the sample) to describe how composite and grab samples are collected and preserved. Record descriptions. Include name of individual and title.

Sorrells Lab Technician takes 24-hour composite sample from tank/vat at the end of the pretreatment system.

Where is the sample point located? ***Effluent tank with top spill to POTW.***

☐ End of Process	☒ Pretreatment Effluent	☐ Total Flow
☐ Combined Flow	☐ Metered Flow	☐ Flow Actuator
☐ Private Manhole	☐ Utility Manhole	☐ Advance Notice Required
☐ Safety Hazards Identified	☐	☐

Is the Sample Collection Site Adequate?	Yes ☐ No ☐ N/A
Does the facility rep. request a split sample on this sampling/inspection?	☐ Yes ☐ No
Does the facility perform self-monitoring tests in-house?	☐ Yes ☐ No ☐ N/A

If no, record the name and address of Contract Lab: ***Sorrells lab in Little Rock***

Automatic Sampler ☐ or Manual ☐

IU Self-Monitoring Results reviewed:	☒ Yes ☐ No ☐ N/A
Is the Contract Lab certified by ADEQ for test parameters?	☒ Yes ☐ No ☐ N/A
Dates and Times of Sample Analysis Recorded?	☒ Yes ☐ No ☐ N/A
Correct Methods Used for Test Analysis (Refer To 40CFR Part 136)	☒ Yes ☐ No ☐ N/A
EPA recommended holding times being met (Refer to 40CFR Part 136)	☒ Yes ☐ No ☐ N/A
Chain of Custody Records for Self-Monitoring Samples Reviewed	☒ Yes ☐ No ☐ N/A
Were correct Sample Types Collected	☒ Yes ☐ No ☐ N/A
Dates and times of Sample Collection Recorded?	☒ Yes ☐ No ☐ N/A
Were Samples preserved correctly (refer to 40CFR Part 136)	☒ Yes ☐ No ☐ N/A
Were Self Monitoring records on file for past 3 years?	☒ Yes ☐ No ☐ N/A

List the parameters the facility monitors and the frequency:

☒ Cd(t) **2/yr**	☒ Cu(t) **2/yr**	☒ Cr(t) **2/yr**	☒ Ni(t) **2/yr**	☒ Pb(t) **2/yr**
☒ Ag(t) **2/yr**	☒ Zn(t) **2/yr**	☐ pH	☒ CN^-(t) **2/yr**	☐ CN^-(a-c)
☒ TTO-Vol **2/yr**	☒ TTO-B/N **2/yr**	☒ TTO-A.E.	☒ TTO-Pest **2/yr**	☐ Cr(hex)
☐	☐	☐	☐	☐

Toxic Organic Management Plan (TOMP) for Metal Finishers under CFR 433

How does the IU report TTO? ☒ Analysis ☐ Certification Statement

Does the facility have a Toxic Organic Management Plan? ☐ Yes ☐ No ☒ N/A

If yes, Does the plan show how toxic organics are used, stored, and disposed? ☐ Yes ☐ No ☒ N/A

List the date of the last revision to the TOMP:

Is the TOMP being followed as written? ☐ Yes ☐ No ☒ N/A (If no, provide explanation in comments.)

If no, is there evidence that a TOMP is needed? ☐ Yes ☐ No ☒ N/A (If yes, provide description of evidence in comments.)

Comments:

5301 Northshore Drive
North Little Rock, AR 72118
Telephone: 501-682-0744

Client Report For: Danfoss, LLC 10-00102 2013 1699
Attention:
Client Address:
,

Report Date: June 17, 2013
LAB ID: AR13MAY15-07
Comment:

Approved By:_____ Date:June 17, 2013

Arkansas Department of Environmental Quality
5301 Northshore Drive
North Liitle Rock, AR 72118

Laboratory Contact: Jeff Ruehr
Ruehr@adeq.state.ar.us
501-682-0955

Client: CSI
Lab ID: 2013-1699
Client Sample ID: DFS
Collection Date: 5/15/2013 11:15:00 AM
Matrix: Water

Analyses

Total Metals by EPA 200.8 ***EPA 200.8*** ***Batch: 13052806*** ***Run: 1***

	Result	Reporting Limit	MDL	Qual	Unit
Aluminum	<200	200	20		ug/L
Antimony	<100	100	5		ug/L
Arsenic	<10	10	0.5		ug/L
Barium	<100	100	2.0		ug/L
Beryllium	<5	5	0.1		ug/L
Boron	7810	250	5.0		ug/L
Cadmium	<10	10	0.3		ug/L
Calcium	85.0	0.4	0.04		mg/L
Chromium	<10	10	0.3		ug/L
Cobalt	<10	10	0.5		ug/L
Copper	<10	10	0.5		ug/L
Iron	1780	200	10.0		ug/L
Lead	<10	10	0.1		ug/L
Magnesium	1.17	1	0.1		mg/L
Manganese	3640	10	0.2		ug/L
Nickel	154	25	0.5		ug/L
Potassium	22.4	10	0.05		mg/L
Selenium	<20	20	0.5		ug/L
Silver	<50	50	1.0		ug/L
Sodium	184	0.4	0.02		mg/L
Thallium	<25	25	0.05		ug/L
Vanadium	39.7	25	1.0		ug/L
Zinc	114	30	2.0		ug/L
Dilution Factor	10				
Analyzed By	Robert Graddy				
Analysis Date/Time	May 24 2013 1:56PM				
Prep By					
Prep Date/Time					

Arkansas Department of Environmental Quality
5301 Northshore Drive
North Liitle Rock, AR 72118

Laboratory Contact: Jeff Ruehr
Ruehr@adeq.state.ar.us
501-682-0955

Analytical Quality Control Results Report

Batch: 13052806	***ICP Metals - water (total)***
DFS	***LIMS ID: 2013-1699***

ICP Metals - water (Total) DUP ***Run: 1***

Parameter	*Result*	*DL*	*RL*	*Accuracy Control*	*Precision Control*
Aluminum	<200 ug/L	200	200		
Aluminum (RPD)	0 %				0 - 20
Antimony (RPD)	1.5 %				0 - 20
Antimony	<100 ug/L	50	100		
Arsenic	<10 ug/L	5	10		
Arsenic (RPD)	10.5 %				0 - 20
Barium (RPD)	5.2 %				0 - 20
Barium	<100 ug/L	20	100		
Beryllium	<5 ug/L	1	5		
Beryllium (RPD)	18.2 %				0 - 20
Boron (RPD)	8.1 %				0 - 20
Boron	8480 ug/L	50	250		
Cadmium	<10 ug/L	3	10		
Cadmium (RPD)	0 %				0 - 20
Calcium (RPD)	12.6 %				0 - 20
Calcium	96.5 mg/L	0.4	0.4		
Chromium	<10 ug/L	3	10		
Chromium (RPD)	0 %				0 - 20
Cobalt (RPD)	0 %				0 - 20
Cobalt	<10 ug/L	5	10		
Copper	<10 ug/L	5	10		
Copper (RPD)	16.5 %				0 - 20
Iron (RPD)	7.8 %				0 - 20
Iron	1650 ug/L	100	200		
Lead	<10 ug/L	1	10		
Lead (RPD)	3.2 %				0 - 20
Magnesium (RPD)	29.0 %				0 - 20
Magnesium	<1 mg/L	1	1		
Manganese	3700 ug/L	2	10		
Manganese (RPD)	3.0 %				0 - 20
Nickel (RPD)	2.9 %				0 - 20

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Nickel	160 ug/L	5	25		
Potassium	25.2 mg/L	0.5	10		
Potassium (RPD)	11.8 %				0 - 20
Selenium (RPD)	0 %				0 - 20
Selenium	<20 ug/L	5	20		
Silver	<50 ug/L	10	50		
Silver (RPD)	0 %				0 - 20
Sodium (RPD)	0.7 %				0 - 20
Sodium	183 mg/L	0.2	0.4		
Thallium	<25 ug/L	0.5	25		
Thallium (RPD)	0.7 %				0 - 20
Vanadium (RPD)	2.1 %				0 - 20
Vanadium	40.5 ug/L	10	25		
Zinc	107 ug/L	20	30		
Zinc (RPD)	6.2 %				0 - 20
Dilution Factor	10				
Analyzed By	Robert Graddy				
Analysis Date/Time	May 24 2013 2:03PM				