



ARKANSAS  
Department of Environmental Quality

December 6, 2012

Hino Motors Manufacturing  
Jerry McPherson  
Manager of EHS  
100 Hino Blvd.  
Marion, AR 72364

Re: ADEQ Pretreatment Compliance Assurance Visit at Hino Motors (ARP001025) discharging to the City of Marion (AR0021971)

Dear Mr. McPherson,

On October 23, 2012 a compliance assurance visit (CAV) was conducted by ADEQ Pretreatment personnel to satisfy the requirements of the memorandum of agreement with EPA Region VI in ADEQ's Pretreatment Program implementation procedures to "randomly sample and analyze the effluent from [Hino] and to conduct surveillance activities in order to identify, independent of information supplied by [Hino] occasional and continuing noncompliance with pretreatment standards" [see 40 CFR 403.8(f)(2)(v)].

The site visit observations, sampling analysis and subsequent information gained indicated Hino is in compliance with the Federal Metal Finishing pretreatment standards for new sources in 40 CFR 433.17. See the below **future requirements** and comments:

- 1) ADEQ's analysis (see attached analytical results) of the four (4) grab samples taken the morning and the afternoon of the CAV showed compliance with the Federal Metal Finishing limitations in 40 CFR 433.17 with nickel being the only metal slightly elevated;
- 2) The samples taken by Hino on the day of the CAV may be used in its December 2012 semi-annual report;
- 3) It was discussed that Hino has a certified ISO 14001 program as well as an Environmental Management System and two other corporate Pollution Prevention programs;
  - a. It was not obvious to this inspector any of those programs were facility wide. The pretreatment system utilized by Hino to treat its wastewater is separated from the production/process part of Hino's operations;
  - b. While the treatment system is well contained its numerous vertical treatment tanks and containment area are uncovered and exposed to the elements with rust observed on most all the iron supports, brackets, etc.;
    - i. Failure of a rusting vertical tank support could potentially lead to a catastrophic event causing a release of toxic chemicals to the adjacent fields;
    - ii. Or worst case scenario cause a worker injury issue;

- c. It was discussed during the site visit when winter weather occurred the previous year an attempt was made to cover the entire pretreatment system with a make-shift canvas/boarded structure heated by "space heaters" which ultimately failed and the wastewater had to be hauled off-site. This doesn't seem to fit an overall environmental management system;
- 4) **If the treatment system is not completely covered by a permanent structure protected from rain events Hino must take into account (by a verifiable measuring device) the amount of rainwater (dilution) by adjusting its metal finishing limits in 40 CFR 433.17 using the combined wastestream formula per 40 CFR 403.6(e)(1)(i);**
  - a. An estimate calculated during the site visit revealed a 1 inch rainfall event mixed with the regulated stream would result in alternate concentration limits of one third of the existing metal finishing limits [from NOAA's National Climatic Data Center, Marion's average annual precipitation is almost 54 inches];
  - b. **Hino must sample and report after each rainfall event and calculate the appropriate alternative concentration limit per the above citation's formula at any time rainfall is mixed with the regulated wastestream being discharged. The alternate concentration limits would replace those on the standardized semi-annual report for those events;**
- 5) pH monitoring is conducted by Hino. It was observed the upper buffer solution for pH calibration expiration date had passed. Hino should ensure the pH calibration buffer solutions are within their expiration dates for accurate pH monitoring; and
- 6) If Hino wishes to have its upper pH limit raised, a request to the appropriate City wastewater official should be made in writing.

This office wishes to extend its sincere appreciation to you and your staff for the transparent exchange of information and dialogue during the visit. Your non-adversarial attitude, willingness to "open the books"; sharing of process knowledge and cooperation compliments the true spirit of environmental partnerships.

Attached you'll find the completed narrative compliance assurance visit checklist and ADEQ analysis of the wastewater discharged during the day of this office's visit.

If this office has misrepresented any part of the checklist items please advise as a few items were only cursorily discussed because of your time constraints on the day of the CAV.


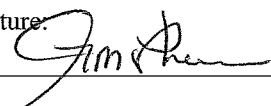
Sincerely,



Allen Gilliam  
ADEQ State Pretreatment Coordinator  
501.682.0625

Attachments: Hino's 10/23/12 Compliance Assurance Site Visit  
ADEQ's Certificate of Analysis from samples taken at Hino on 10/23/12  
ec: Jim Shempert, City of Marion, Utility Manager  
Craig Uyeda, NPDES Enforcement Branch Manager  
Rudy Molina, EPA Region 6 Pretreatment Coordinator

**ADEQ Pretreatment Industrial Inspection  
Facility Information**

<b>Facility Name:</b> Hino Motor Mfg. USA LLC		Site Address: 100 Hino Blvd. Marion, AR 72364	
Signatory Authority (Name & Title): Jerry McPherson; Manager of Environmental/Health/Safety			
Phone: 870.702.3037		Mailing Address (if different): same	
Cell: 870.635.1367			
Fax: 870.702.3000		Corporate Owner Name and address:	
Address: same		Hino Motors Mfg. USA, Inc.; 37777 Interchange Drive;	
Contact Person (Name & Title): Jerry McPherson		Farmington Hills, MI 48335	
		Phone: 248.442.9077	
Phone: same		Fax: 248.442.9068	
Fax: same		Corporate CEO:	
e-mail: <a href="mailto:jmcperson@hmmusa.com">jmcperson@hmmusa.com</a>		e-mail:	
Facility Tracking #ARP001025; AFIN #1800565		<b>Last Inspection Date:</b> N/A (this will be the 1 <sup>st</sup> CAV)	
POTW (City) IU discharges to: Marion, AR		POTW's NPDES #AR0021971	
Industrial Classification:	<input checked="" type="checkbox"/> Categorical – Metal Finisher	<input type="checkbox"/> Significant	
If Categorical, list which CFR #(s) the facility is subject to: 40 CFR 433.17			
When did this industry begin discharging to the POTW? 11/2/06			
Table of Contents			
I. Summary of Inspection		Page 2 of 10	
A. Inspection Objectives			
B. Inspection Analysis			
II. Pre-Inspection Meeting		Pages 3 & 4 of 10	
A. General Information			
B. Facility Permits			
C. Additional Comments			
III. Attachments “Yes” indicates item exists at the facility and attachments/discussion will be included			
“No” indicates item does not exist at the facility and attachments/discussion aren't necessary			
A. Industrial Processes		yes <input checked="" type="checkbox"/> no <input type="checkbox"/> Page 5 of 10	
B. Pollution Prevention Activities		yes <input checked="" type="checkbox"/> no <input type="checkbox"/> Page 6 of 10	
C. Pretreatment System		yes <input checked="" type="checkbox"/> no <input type="checkbox"/> Page 7 of 10	
D. Chemical Storage/handling		yes <input checked="" type="checkbox"/> no <input type="checkbox"/> Page 8 of 10	
E. Spill/Slug Control Plan		yes <input checked="" type="checkbox"/> no <input type="checkbox"/> Page 9 of 10	
F. Self-Monitoring/TOMP		yes <input checked="" type="checkbox"/> no <input type="checkbox"/> Page 10 of 10	
Comments :			
Inspector's Name (Print): Allen Gilliam		Signature: 	
IU Rep's Name (Print): Jerry McPherson		Signature: 	
Date and Time Inspection Ended: 10/23/12 @ 5:30 pm			

<b>I. Summary of Inspection</b>			
<b>A. Inspection and Objective (Complete Before Inspection)</b>			
<input type="checkbox"/> Permit Renewal	<input checked="" type="checkbox"/> Bi-Annual	<input type="checkbox"/> Spill/Slug	<input type="checkbox"/> Unscheduled
<input type="checkbox"/> New Construction	<input type="checkbox"/> Noncompliance	<input type="checkbox"/> Follow-up	<input type="checkbox"/> Complaint
Inspection Objective(s): Compliance assurance visit with sampling to implement the Federal Pretreatment Regulations in 40 CFR 403.8(f)(2)(v) and more specifically to verify compliance with the Federal Metal Finishing Pretreatment limitations in 40 CFR 433.17 (Pretreatment Standards for New Sources – PSNS).			
Checklist of items to be reviewed and/or visually inspected:			
<input checked="" type="checkbox"/> Pre-inspection Meeting	<input type="checkbox"/> Permit Conditions (N/A)	<input checked="" type="checkbox"/> Safety Concerns	
<input checked="" type="checkbox"/> Process Inspection	<input checked="" type="checkbox"/> Pretreatment System	<input type="checkbox"/> TOMP (one not submitted as yet)	
<input checked="" type="checkbox"/> Chemical Storage	<input checked="" type="checkbox"/> Discharge point(s)	<input checked="" type="checkbox"/> Spills/Slug Control Plan	
<input checked="" type="checkbox"/> Records Review	<input type="checkbox"/> RCRA information	<input checked="" type="checkbox"/> Process/Flow/Pretreatment Schematics	
<input checked="" type="checkbox"/> IU sampling procedures	<input checked="" type="checkbox"/> Flow/pH Meter(s)	<input checked="" type="checkbox"/> Calibration Records	
<input checked="" type="checkbox"/> MSDS Inventory List	<input checked="" type="checkbox"/> New MSDS	<input checked="" type="checkbox"/> P2, BMPs, EMS, etc.	
Comments: Main MSDS included with BMR submitted to ADEQ on 4/13/12.			
<b>B. Inspection Analysis</b>			
Were there any deficiencies/violations identified and noted during the inspection? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Provide a brief narrative of deficiencies/violations or other concerns in the following areas:			
Records Review: Adequate, no comment.			
Process Area(s): Adequate, no comment.			
Pretreatment System: Hino's pretreatment tanks/pumps/etc supports/hold down brackets were rusting because of exposure to the elements. Most of their pretreatment system is not under cover and is surrounded by a concrete wall to capture any rainfall. The area not under cover was estimated at 3,400 ft <sup>2</sup> . A one-day, one inch rainfall event could contribute over 2,100 gpd to the facility's ~6,000 gpd of regulated wastewater.			
The combined wastestream formula would have to be used to take into account the rainfall (dilution) which the facility pumps from the containment area's sump into the initial w.w. holding tank, hence through pretreatment. This computation is further complicated because of the unknowns of rainfall introduced into the regulated wastestream in what amount at what time.			
More importantly, the condition of the pretreatment chemical tank "legs" were corroding. A catastrophic failure could cause any one of them to fall outside the containment area spilling many gallons of different chemicals into the stormwater containment area.			
Proper maintenance of Hino's pretreatment system is deemed inadequate. The pretreatment system should be protected from the elements.			
Self-Monitoring Procedures: Upper pH buffer (for calibration) had expired. Discharge flow meter was not calibrate-able.			
Accidental discharge/Slug Control Plan: Slug discharge potential was deemed negligible. There are no floor drains in the entire (production) building that are not connected to the pretreatment system.			
Sampling Point: Final pH adjustment tank, exposed to the elements. Rainfall (or snowmelt) not taken into account when sampling for compliance.			
Chemical Storage: All chemical have to be physically checked out and signed for.			

<b>II. Pre-Inspection Meeting</b>		
<b>A. General Information</b>		
Date and Time Inspection Started: 10/23/12 @ 8:20 a.m.		NAICs code(s): 33635
IU Reps/Titles: Jerry McPherson/Mgr. of EHS		ADEQ Authority Reps/Titles:
Rico Jeffries/W.W. Treatment Operator/Maint. Tech.		Allen Gilliam/State Pretreatment Coordinator
End product(s): "Finished" truck axles, differentials, suspensions and "side rails".		Approx. # of units produced: ~400 (production is down.)
Days of Operation: 5		Days of Production (if different): same
Hours of Operation: 16		Hours of Production (if different): same
Shift 1, hrs: 6 a.m. to 2:30 p.m.	Shift 2, hrs: 5 p.m. to 1:30 a.m.	Shift 3, hrs: n/a to
# of Employees: 336	Peak Months: n/a	"Off" Months: n/a
Are there any scheduled plant shutdowns? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> If yes, when? 2/yr (mid-July & late December)		
Are there designated plant clean-up days? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> If yes, when? daily		
<b>Is the facility currently in compliance with all pretreatment reporting requirements and limits?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
If No, explain:		
Are there any Special Entry Procedures for the Discharge/Sample point locations? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
If Yes, explain: An authorized rep would have to check in as a visitor and have an escort to the sampling point. This, for safety of person entering plant.		
Are there any Safety Concerns or Identified Hazards that the inspector should be aware of: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
If Yes, explain: Watch for forklifts and auto guided vehicles. Safety glasses and hard hats are required.		
<b>Has there been any changes since the last inspection regarding the following items:</b> N/A since this the first compliance assurance visit.		
Plant/flow/process layout? Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, obtain copy of updated schematic for facility file.		
Processes? Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, explain:		
Production Levels? Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, explain:		
Raw materials? Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, explain:		
Flow rates? Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, explain:		
Are regulated and non-regulated wastestreams combined?      yes <input checked="" type="checkbox"/> no <input type="checkbox"/>		
Prior to Pretreatment System?                                      yes <input checked="" type="checkbox"/> no <input type="checkbox"/> N/A <input type="checkbox"/>		
If Yes, was the CWF used to calculate limits?                      yes <input type="checkbox"/> no <input checked="" type="checkbox"/> N/A <input type="checkbox"/>		
Prior to connection to the POTW sanitary sewer?                      yes <input type="checkbox"/> no <input checked="" type="checkbox"/> N/A <input type="checkbox"/>		
See notation regarding the pretreatment containment area and rainfall not being taken into account for compliance.		



**Attachment A: Industrial Process(es)**

List process(es) generating wastewater. Note whether it is subject to Federal Pretreatment Standards

1. Conversion coating: Zn Phosphatizing	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	4.	Yes <input type="checkbox"/> No <input type="checkbox"/>
2. Fluorozirconic Acid tank (conversion coating)	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	5.	Yes <input type="checkbox"/> No <input type="checkbox"/>
3. Various ancillary operations (rinses)	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	6.	Yes <input type="checkbox"/> No <input type="checkbox"/>

Were processes visually inspected? Yes  No

Brief description of process(es): Facility's Electro-Coating (ED) of truck axles includes: 1) Parts are degreased in a tank (1,600 gal) of caustic solution of trisodium phosphate, sodium carbonate, sodium nitrite and surfactants; 2) then sent through a fresh water spray booth (480 gal); 3) this is followed by a caustic surface conditioner dip tank (1,600 gal) with trizinc diphosphate, tripotassium phosphate and potassium hydroxide; 4) Parts are then dipped in a "bonderizing" (Zn phosphate) tank (1,600 gal) with accelerants (sodium nitrate) and additives (hydrofluorosilic acid); 5) then sent through a fresh water rinse tank (1,600 gal) followed by 6) a RO water rinse tank (1,600 gal); 7) Parts are then dipped into the electro-deposition (ED) black coating (cationic resin/pigment) tank (3,800 gal); 8) Parts are then dipped in a UF water tank (1,600 gal) with 9) a final RO water rinse tank (1,600 gal) before being conveyed to the curing oven (190° C). These tanks are batch discharged at varying frequencies from once per 7 days to once per 180 days with tanks 7 and 8 being in-situ filtered and recycled with some overflow to pretreatment.

"Side rails" for Hino trucks are brought in as cold rolled steel "strips" that are stamped into blanks. They're formed into "C" channels (side rails), sent through a straightening machine, placed on a conveyor for further laser hole cutting, drilling, tapping then shot blasted. The side rails are then sent through a typical 7 stage phosphatizing "wash". The side rails are conveyed through a hot water spray "pre-degreasing" booth (132 gal) followed by a caustic degreasing (sodium hydroxide) spray booth (185 gal) stage; then to two (2) fresh water spray booths (212 gal total); then parts are sent through a hexafluorozirconic acid (conversion coating) spray booth (370 gal) prior to 2 RO water spray booths (264 gal total). The side rails are air dried or sent through a dry-off oven then sent to powder coating then sent to the sent through a curing oven. All tanks in the side rail process are discharged ~ every 30 days. All tanks in the process area are labeled with either the chemicals that are in them or water (rinse) and batch discharge volumes and dates.

General observations of facility's indoor housekeeping: Clean and orderly. Some clear fluids were noted on the concrete floor around the phosphatizing line. Below grade troughs would capture this and direct it to their w.w. holding tank.

General observations of area outside facility's building: Orderly and clean. No evidence of illegal direct discharge. Storm water was directed via ditches to their on-site holding pond.

Check all sources of wastewater being discharged into the City's collection system. Indicate avg. gal/day, measured or estimated. If batch discharged, list frequency and volume (1000 gal/month, e.g.).

<input checked="" type="checkbox"/> Process Rinse Overflows See above process description.	<input type="checkbox"/> Equip. Cleanup	<input type="checkbox"/> Floor Cleanup	<input checked="" type="checkbox"/> Spent Bath Solutions See above process description.
<input type="checkbox"/> Product Cleaning	<input type="checkbox"/> Forklifts Maint./Wash	<input type="checkbox"/> Tank Dragout	<input type="checkbox"/> Air Pollution Devices
<input type="checkbox"/> Boiler Blowdown	<input checked="" type="checkbox"/> Spent Rinse Tanks See above process description.	<input type="checkbox"/> Equipment Coolants	<input type="checkbox"/> Non-Contact Cooling Water

List Major Raw Materials and Chemicals used: Primarily listed above. Partial MSDS included with BMR submitted to ADEQ on 4/13/12 including hot rolled, pickled and oiled steel composition and main chems used in their regulated processes as well as their pretreatment system.

Check Waste Stream Pollutants of Concern from Process(es)

<input checked="" type="checkbox"/> CN	<input checked="" type="checkbox"/> Metals (List) All from 40 CFR 433.17	<input checked="" type="checkbox"/> Solvents (List) All listed in 40 CFR 433.11 (no Toxic Organic Management Plan submitted as yet)
<input checked="" type="checkbox"/> pH	<input type="checkbox"/>	<input type="checkbox"/>

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 <input checked="" type="checkbox"/>	No <input type="checkbox"/>	“Toyota production System” (TPS) and “Houshin”
Does this facility practice P2?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Environmental Management System in place?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Doesn't appear to be comprehensive since it hasn't identified the potential impacts/aspects of a catastrophic pretreatment system failure and its effect on the environment or worker safety.
ISO 140001 Certified?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Written Standard Operating Procedures?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Explain: Every station and piece of machinery has a written standard operation procedure located near it with an assortment of QA/QC checks to measure or check off at their station.			
Preventative Maintenance Program	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	(hydraulic systems, valves, pumps, etc)
Explain: The facility has a computerized maintenance management system (CMMS) and using a MP2 data stream.			
Water Reuse:	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Explain: Counter current flows; RO rinses and air curtains.			
Cost Accounting to Track Savings:	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Explain: Didn't get into detail on this issue.			
Inventory Control / “Green Purchasing”:	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	(lean manufacturing/“green purchasing”, etc)
Explain: Certain chemicals will not be allowed to be bought in lieu of “green” chemicals that accomplish the same function.			
Employee Training:	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Explain: Each “work station” has an SOP in a clear plastic cover on a board with quality control checklists to be filled out by the operator on duty.			
Spent Solvent Reclamation?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
Explain:			
Recycle Paper, Aluminum, Boxes, and Pallets?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Explain: All the above and scrap iron also.			
Recycle Waste Oil, Solvents, and Lubricants?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Explain: Any of the above are sent off-site for recycle.			
Other Activities:			
P2 Equipment/Practices in use:			
<input checked="" type="checkbox"/> Overflow Alarms	<input checked="" type="checkbox"/> Aqueous Cleaning Solutions		
<input type="checkbox"/> Fog Spray Rinsing	<input checked="" type="checkbox"/> Countercurrent Rinsing		
<input checked="" type="checkbox"/> Dragout Collection Trays	<input type="checkbox"/> Seal-Less Pumps		
<input checked="" type="checkbox"/> Air Jets to Blow Parts Dry	<input type="checkbox"/> Secondary Containment of Process Solutions		
<input type="checkbox"/> Aqueous Paint Stripping Solutions	<input type="checkbox"/> Bead Blasting to Remove Paint		
<input checked="" type="checkbox"/> Water Soluble Cutting Fluids	<input type="checkbox"/> Recycle Overspray		
<input checked="" type="checkbox"/> In-Process Recycle (Ion Exchange, Reverse Osmosis)	<input checked="" type="checkbox"/> Conductivity Meters		
<input type="checkbox"/> Dead Rinse Tanks	<input checked="" type="checkbox"/> Bath / Rinse Filtration (in-situ)		



**Attachment C: Pretreatment System**

Are wastestreams segregated before pretreatment?				<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Are they pretreated prior to discharge to the sanitary sewer?				<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Was the pretreatment system visually inspected during this visit?				<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Pretreatment system is separated from the main production/process building by about two hundred feet.						
Check which of the following are utilized for pretreatment prior to discharge to sanitary sewer:						
<input type="checkbox"/> Dissolved air floatation	<input type="checkbox"/> Membrane Tech.	<input checked="" type="checkbox"/> Ion Exchange*	<input type="checkbox"/> Biological Treatment			
<input type="checkbox"/> Centrifugation	<input type="checkbox"/> Flow Equalization	<input type="checkbox"/> Ozonation	<input type="checkbox"/> Chlorinating			
<input checked="" type="checkbox"/> Chemical Precipitation	<input type="checkbox"/> Oil/Water Separation	<input type="checkbox"/> Reverse Osmosis	<input type="checkbox"/> Grit Removal			
<input checked="" type="checkbox"/> Sludge Filter Press	<input type="checkbox"/> Grease Trap	<input type="checkbox"/> Screen	<input type="checkbox"/> Solvent Separation			
<input checked="" type="checkbox"/> pH Adjustment	<input type="checkbox"/> Sand Trap	<input type="checkbox"/> Sedimentation	<input type="checkbox"/> Silver Recovery			
<input type="checkbox"/> Belt/Disk Oil Skimmer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
*For heat treatment water from axle shaft quench.						
Provide Brief Description of Pretreatment System (leaks, cleanliness, equipment not in working order): Typical chemical precipitation system beginning with a w.w. holding pit; w.w. tank; pH adjustment; coagulation, settling, solids slurry sent through a filter press (with filtrate returned to the w.w. tank); further polishing with sand filter, activated charcoal adsorption prior to automated pH neutralization tank and discharge to the City. The entire pretreatment system is uncovered and unprotected from the elements.						
Does the description match the schematic currently on file?				<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
Pretreatment system schematic still shows the fluorine adsorption chelate resin tower which is no longer in use.						
System Operator Name(s): Rico Jeffery and Steve Kowis						
Does discharge permit require licensed operator?				<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
Is the System Operator(s) licensed by the State of Arkansas?				<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
List Name(s) and License classification: Both the above have an industrial Class A license.						
Is training provided to the Pretreatment System Operator(s)?				<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
If Yes, list type and frequency: Not discussed.						
Is the discharge from the Pretreatment System?				<input type="checkbox"/> Batch	<input checked="" type="checkbox"/> Continuous	<input type="checkbox"/> Combination
If any discharges are batch type or combination, describe the following: N/A						
Volume of discharge: ~7050 gallons per day						
Describe process from which batch originated (spent bath, e.g.): See "Attachment A: Industrial Process(es)", page 5.						
Approximate duration of batch discharge:						
Meter Type	Calibration Procedure and Frequency		Comments (Totalizer Reading)			
unknown	Not being done and not known if the flow meter can be.		Daily readings are recorded.			

**Attachment D: Chemical Storage Area(s)**

Does the facility have a designated chemical storage area(s)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Was this area(s) visually inspected? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Describe Chemical Storage Area(s)	Are there floor drains in this area?	If yes, where does this drain lead to?
1. Locked and fenced in and can only be accessed by designated personnel with a magnetic card. There is a person behind the parts/chems counter that verifies/tracks all material taken from this area.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Pretreatment <input type="checkbox"/> Sanitary Sewer <input type="checkbox"/> Storm Sewer
2. Specific chems are at designated stations and are only replenished as needed via system described above.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Pretreatment <input type="checkbox"/> Sanitary Sewer <input type="checkbox"/> Storm Sewer
3. Outside chemical storage is self-contained and climate controlled. It mainly contains their powder and liquid ED coat paints.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Pretreatment <input type="checkbox"/> Sanitary Sewer <input type="checkbox"/> Storm Sewer
4.	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Pretreatment <input type="checkbox"/> Sanitary Sewer <input type="checkbox"/> Storm Sewer
Does the Chemical Storage Area(s) contain any of the following?		
<input type="checkbox"/> Dikes, Berms for Containment	<input type="checkbox"/> Plugs for Floor Drains	
<input type="checkbox"/> Secondary Tanks for Holding	<input type="checkbox"/> Premix (low) Concentrations	
<input checked="" type="checkbox"/> Alarms (for temperature control of some processes)	<input checked="" type="checkbox"/> Chain restraints, limited access See #1 above.	
<input type="checkbox"/> Spills Control Kits for Cleanup	<input type="checkbox"/> Notification Procedures	
<input checked="" type="checkbox"/> Chemical desegregation within Storage Area	<input type="checkbox"/> Other	
Chemical Inventory List (MSDS) on file? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
All chems' MSDS including spray aerosols are kept electronically on a facility-wide basis and can be retrieved via their computerized tracking system. Only a specific number of key personnel have access to this d-base on their computers.		
Were any new MSDS reviewed during the Inspection? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		
Time constraints did not allow for a comprehensive review of the facility's entire MSDS list. Facility rep displayed chemicals on their tracking list that would not be allowed to be purchased because of company policy.		
Chemical storage comments: Adequate, no comment. Combustibles are kept in separate closed door cabinets.		
Chemical handling procedures (totes, dolly, buckets, hardline, etc): forklifts and barrel dollies using the "X-change program" described in #1 above.		
Hazardous waste chemical handling procedures (properly sealed containers, labeled, manifests, etc): Did not have time to make any observations or ask questions regarding haz waste.		

**Attachment E: Spill/Slug Control Plan [Slug discharge potential deemed negligible]**

Does the facility have an accidental discharge/Slug control plan?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
If yes are the following: 403.8(f)(2)(v)(A-D) requirements in place?	
Is the spill/slug control plan <2 years old?	<input type="checkbox"/> yes <input type="checkbox"/> no <input checked="" type="checkbox"/> N/A
(A) Describes discharge practices including non routine batch (slug) discharges	<input type="checkbox"/> yes <input type="checkbox"/> no <input checked="" type="checkbox"/> N/A
(B) Describes storage and handling of chemicals	<input type="checkbox"/> yes <input type="checkbox"/> no <input checked="" type="checkbox"/> N/A
(C) Procedures for immediate notification to POTW of slug discharges	<input type="checkbox"/> yes <input type="checkbox"/> no <input checked="" type="checkbox"/> N/A
(D) 1. Describes measures for controlling toxic/hazardous pollutants	<input type="checkbox"/> yes <input type="checkbox"/> no <input checked="" type="checkbox"/> N/A
2. Describes procedures and equipment for emergency response	<input type="checkbox"/> yes <input type="checkbox"/> no <input checked="" type="checkbox"/> N/A
3. Describes follow-up to limit damage suffered by POTW or environment	<input type="checkbox"/> yes <input type="checkbox"/> no <input checked="" type="checkbox"/> N/A
4. Does the facility have Spill/Slug Notification Procedures posted?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> N/A
5. Are worker personnel provided training in the event of a spill or slug discharge? Once/6 mos.	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> N/A
Does the facility have Spill/Slug Notification Procedures posted?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
Is it posted in areas where chemicals are used and stored?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
Are appropriate personnel provided training in the event of a spill or slug discharge?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
Has there been any non-routine, episodic chemical spills discharged to the City in the past year?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
(Briefly Describe, Include Dates)	
Was the City notified of these occurrences? <input type="checkbox"/> yes <input type="checkbox"/> no <input checked="" type="checkbox"/> N/A	
<b>Visual Inspection of Discharge Lines/Points</b>	
Sampling / Monitoring Point: The sampling point is at the final pH adjustment tank prior to being discharged to the City. It is well mixed and homogenous. This open topped tank is about 6 to 7 feet in diameter. The Pretreatment system operator would have to show an inspector which tank is for compliance sampling.	
Total Flow Monitoring Point:	
Upstream Manhole:	
Point of Connection:	

**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. Rico Jeffery was the Pretreatment operator on-duty at the time of this CAV. His sampling technique is to dip a glass measuring container into the top of the continually mixed wastewater tank to be discharged. He rinses the measuring container and then collects enough fluid to top-off his sample containers provided by an outside lab.

Where is the sample point located?

<input type="checkbox"/> End of Process	<input checked="" type="checkbox"/> Pretreatment Effluent	<input type="checkbox"/> Total Flow
<input type="checkbox"/> Combined Flow	<input type="checkbox"/> Metered Flow	<input type="checkbox"/> Flow Actuator
<input type="checkbox"/> Private Manhole	<input type="checkbox"/> Utility Manhole	<input checked="" type="checkbox"/> Advance Notice Required

Is the Sample Collection Site Adequate?  Yes  No  N/A

**Does the facility rep. request a split sample on this sampling/inspection?**  Yes  No (although not a true "split")

Does the facility perform self-monitoring tests in-house?  Yes (for pH)  No  N/A

If no, record the name and address of Contract Lab: ETC, Memphis, TN

Automatic Sampler  or Manual

IU Self-Monitoring Results reviewed: (from initial 4/13/12 BMR and semi-annual report.)  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 *not included*

Were correct Sample Types Collected  Yes  No  N/A *unknown*

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 Facility just began semi-annual reporting (1 rec'd).

**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

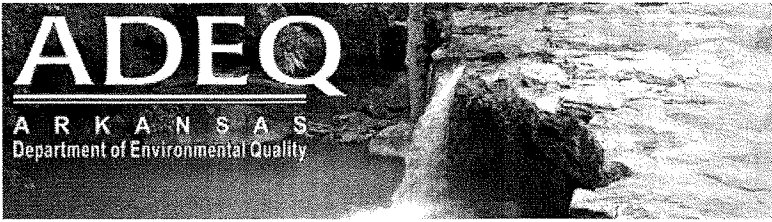
**If yes**, Does the plan show how toxic organics are used, stored, and disposed?  Yes  No  N/A

List the date of the last revision to the TOMP: N/A

Is the TOMP being followed as written?  Yes  No  N/A Toxic Organic Management Plan yet to be submitted

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

Comments: Initial TTO scan submitted with their 4/13/12 baseline monitoring report indicated non-detects for all, but some non-detects were reported at <0.5 and <0.2 mg/l. TTO samples were diluted by 10 times according to the contract lab's report.



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

**Client Report For:** Hino Motor Mfg. 10-00565 2012 3388-3391  
**Attention:**  
**Client Address:**

**Report Date:** December 04, 2012  
**LAB ID:** AR12OCT24-06  
**Comment:**

Approved By: Allen Bellman

Date: December 04, 2012

**Client:** CSI **Client Sample ID:** Hino 1A  
**Lab ID:** 2012-3388 **Collection Date:** 10/23/2012 10:46:00 AM  
**Matrix:** Water

**Analyses**

*Total Metals by EPA 200.8* **EPA 200.8** **Batch: 12113004 Run: 1**

	<b>Result</b>	<b>Reporting Limit</b>	<b>MDL</b>	<b>Qual</b>	<b>Unit</b>
Aluminum	<20	20	20		ug/L
Antimony	<10	10	5		ug/L
Arsenic	3.34	1	0.5		ug/L
Barium	<10	10	2.0		ug/L
Beryllium	<0.5	0.5	0.1		ug/L
Boron	124	25	5.0		ug/L
Cadmium	<1	1	0.3		ug/L
Calcium	104	0.04	0.04		mg/L
Chromium	<1	1	0.3		ug/L
Cobalt	1.49	1	0.5		ug/L
Copper	5.69	1	0.5		ug/L
Iron	<20	20	10.0		ug/L
Lead	<1	1	0.1		ug/L
Magnesium	0.78	0.1	0.1		mg/L
Manganese	453	1	0.2		ug/L
Potassium	14.7	1	0.05		mg/L
Selenium	<2	2	0.5		ug/L
Silver	<5	5	1.0		ug/L
Thallium	<2.5	2.5	0.05		ug/L
Vanadium	<2.5	2.5	1.0		ug/L
Zinc	56.1	3	2.0		ug/L
Dilution Factor	1				
Analyzed By	Robert Graddy				
Analysis Date/Time	Nov 27 2012 5:27AM				
Prep By					
Prep Date/Time					

*Total Metals by EPA 200.8* **EPA 200.8** **Batch: 12113004 Run: 2**

	<b>Result</b>	<b>Reporting Limit</b>	<b>MDL</b>	<b>Qual</b>	<b>Unit</b>
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Arkansas Department of Environmental Quality  
5301 Northshore Drive  
North Little Rock, AR 72118

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

Nickel	1050	25	0.5	ug/L
Sodium	701	0.4	0.02	mg/L
Dilution Factor	10			
Analyzed By	Robert Graddy			
Analysis Date/Time	Nov 27 2012 5:07PM			
Prep By				
Prep Date/Time				

**Client:** CSI **Client Sample ID:** Hino 1B  
**Lab ID:** 2012-3389 **Collection Date:** 10/23/2012 10:47:00 AM  
**Matrix:** Water

**Analyses**

Total Metals by EPA 200.8		EPA 200.8	Batch: 12113004 Run: 1		
	<u>Result</u>	<u>Reporting Limit</u>	<u>MDL</u>	<u>Qual</u>	<u>Unit</u>
Aluminum	<20	20	20		ug/L
Antimony	<10	10	5		ug/L
Arsenic	12.0	1	0.5		ug/L
Barium	<10	10	2.0		ug/L
Beryllium	<0.5	0.5	0.1		ug/L
Boron	122	25	5.0		ug/L
Cadmium	<1	1	0.3		ug/L
Calcium	53.0	0.04	0.04		mg/L
Chromium	<1	1	0.3		ug/L
Cobalt	<1	1	0.5		ug/L
Copper	2.82	1	0.5		ug/L
Iron	<20	20	10.0		ug/L
Lead	<1	1	0.1		ug/L
Magnesium	0.55	0.1	0.1		mg/L
Manganese	230	1	0.2		ug/L
Potassium	15.5	1	0.05		mg/L
Selenium	<2	2	0.5		ug/L
Silver	<5	5	1.0		ug/L
Thallium	<2.5	2.5	0.05		ug/L
Vanadium	2.62	2.5	1.0		ug/L
Zinc	21.9	3	2.0		ug/L
Dilution Factor	1				
Analyzed By	Robert Graddy				
Analysis Date/Time	Nov 27 2012 5:33AM				
Prep By					
Prep Date/Time					

Total Metals by EPA 200.8		EPA 200.8	Batch: 12113004 Run: 2		
	<u>Result</u>	<u>Reporting Limit</u>	<u>MDL</u>	<u>Qual</u>	<u>Unit</u>
Nickel	837	25	0.5		ug/L



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501-682-0955

Sodium	764	0.4	0.02	mg/L
Dilution Factor	10			
Analyzed By	Robert Graddy			
Analysis Date/Time	Nov 27 2012 5:13PM			

**Client:** CSI **Client Sample ID:** Hino 2A  
**Lab ID:** 2012-3390 **Collection Date:** 10/23/2012 4:10:00 PM  
**Matrix:** Water

**Analyses**

<i>Total Metals by EPA 200.8</i>	<i>EPA 200.8</i>	<i>Batch: 12113004 Run: 1</i>			
	<b>Result</b>	<b>Reporting Limit</b>	<b>MDL</b>	<b>Qual</b>	<b>Unit</b>
Aluminum	<20	20	20		ug/L
Antimony	<10	10	5		ug/L
Arsenic	3.39	1	0.5		ug/L
Barium	<10	10	2.0		ug/L
Beryllium	<0.5	0.5	0.1		ug/L
Boron	121	25	5.0		ug/L
Cadmium	<1	1	0.3		ug/L
Calcium	104	0.04	0.04		mg/L
Chromium	<1	1	0.3		ug/L
Cobalt	1.52	1	0.5		ug/L
Copper	5.80	1	0.5		ug/L
Iron	<20	20	10.0		ug/L
Lead	<1	1	0.1		ug/L
Magnesium	0.76	0.1	0.1		mg/L
Manganese	452	1	0.2		ug/L
Potassium	14.8	1	0.05		mg/L
Selenium	<2	2	0.5		ug/L
Silver	<5	5	1.0		ug/L
Thallium	<2.5	2.5	0.05		ug/L
Vanadium	<2.5	2.5	1.0		ug/L
Zinc	55.9	3	2.0		ug/L
Dilution Factor	1				
Analyzed By	Robert Graddy				
Analysis Date/Time	Nov 27 2012 6:10AM				
Prep By					
Prep Date/Time					

<i>Total Metals by EPA 200.8</i>	<i>EPA 200.8</i>	<i>Batch: 12113004 Run: 2</i>			
	<b>Result</b>	<b>Reporting Limit</b>	<b>MDL</b>	<b>Qual</b>	<b>Unit</b>
Nickel	1060	25	0.5		ug/L

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Ruehr@adeq.state.ar.us  
501-682-0955

Sodium	710	0.4	0.02	mg/L
Dilution Factor	10			
Analyzed By	Robert Graddy			
Analysis Date/Time	Nov 27 2012 5:25PM			
Prep By				
Prep Date/Time				

**Client:** CSI **Client Sample ID:** Hino 2B  
**Lab ID:** 2012-3391 **Collection Date:** 10/23/2012 4:10:00 PM  
**Matrix:** Water

**Analyses**

<i>Total Metals by EPA 200.8</i>		<i>EPA 200.8</i>	<i>Batch: 12113004 Run: 1</i>		
	<u>Result</u>	<u>Reporting Limit</u>	<u>MDL</u>	<u>Qual</u>	<u>Unit</u>
Aluminum	<20	20	20		ug/L
Antimony	<10	10	5		ug/L
Arsenic	11.3	1	0.5		ug/L
Barium	<10	10	2.0		ug/L
Beryllium	<0.5	0.5	0.1		ug/L
Boron	120	25	5.0		ug/L
Cadmium	<1	1	0.3		ug/L
Calcium	53.9	0.04	0.04		mg/L
Chromium	1.16	1	0.3		ug/L
Cobalt	1.06	1	0.5		ug/L
Copper	5.66	1	0.5		ug/L
Iron	24.4	20	10.0		ug/L
Lead	3.52	1	0.1		ug/L
Magnesium	0.59	0.1	0.1		mg/L
Manganese	232	1	0.2		ug/L
Potassium	15.9	1	0.05		mg/L
Selenium	<2	2	0.5		ug/L
Silver	<5	5	1.0		ug/L
Thallium	<2.5	2.5	0.05		ug/L
Vanadium	2.61	2.5	1.0		ug/L
Zinc	57.2	3	2.0		ug/L
Dilution Factor	1				
Analyzed By	Robert Graddy				
Analysis Date/Time	Nov 27 2012 6:17AM				
Prep By					
Prep Date/Time					

<i>Total Metals by EPA 200.8</i>		<i>EPA 200.8</i>	<i>Batch: 12113004 Run: 2</i>		
	<u>Result</u>	<u>Reporting Limit</u>	<u>MDL</u>	<u>Qual</u>	<u>Unit</u>
Nickel	836	25	0.5		ug/L

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

Sodium	760	0.4	0.02	mg/L
Dilution Factor	10			
Analyzed By	Robert Graddy			
Analysis Date/Time	Nov 27 2012 5:32PM			
Prep By				
Prep Date/Time				

## Analytical Quality Control Results Report

<b>Batch: 12113004</b>	<b>ICP Metals - water (total)</b>
<i>Hino 1B</i>	<i>LIMS ID: 2012-3389</i>

*ICP Metals - water (Total) DUP*

*Run: 1*

<i>Parameter</i>	<i>Result</i>	<i>DL</i>	<i>RL</i>	<i>Accuracy Control</i>	<i>Precision Control</i>
Aluminum	<20 ug/L	20	20		
Aluminum (RPD)	198 %				0 - 20
Antimony (RPD)	802 %				0 - 20
Antimony	<10 ug/L	5	10		
Arsenic	3.54 ug/L	0.5	1		
Arsenic (RPD)	109 %				0 - 20
Barium (RPD)	85.9 %				0 - 20
Barium	<10 ug/L	2	10		
Beryllium	<0.5 ug/L	0.1	0.5		
Beryllium (RPD)	0 %				0 - 20
Boron (RPD)	0.8 %				0 - 20
Boron	123 ug/L	5	25		
Cadmium	<1 ug/L	0.3	1		
Cadmium (RPD)	0 %				0 - 20
Calcium (RPD)	66.0 %				0 - 20
Calcium	105 mg/L	0.04	0.04		
Chromium	<1 ug/L	0.3	1		
Chromium (RPD)	30.2 %				0 - 20
Cobalt (RPD)	44.5 %				0 - 20
Cobalt	1.51 ug/L	0.5	1		
Copper	5.76 ug/L	0.5	1		
Copper (RPD)	68.5 %				0 - 20
Iron (RPD)	144 %				0 - 20
Iron	<20 ug/L	10	20		
Lead	<1 ug/L	0.1	1		
Lead (RPD)	0 %				0 - 20
Magnesium (RPD)	35.8 %				0 - 20
Magnesium	0.79 mg/L	0.1	0.1		
Manganese	460 ug/L	0.2	1		
Manganese (RPD)	67 %				0 - 20
Potassium	15.0 mg/L	0.05	1		

Potassium (RPD)	2.9 %			0 - 20
Selenium (RPD)	15.0 %			0 - 20
Selenium	<2 ug/L	0.5	2	
Silver	<5 ug/L	1	5	
Silver (RPD)	0 %			0 - 20
Thallium (RPD)	0 %			0 - 20
Thallium	<2.5 ug/L	0.05	2.5	
Vanadium (RPD)	92.9 %			0 - 20
Vanadium	<2.5 ug/L	1	2.5	
Zinc	57.4 ug/L	2	3	
Zinc (RPD)	89.4 %			0 - 20
Dilution Factor	1			
Analyzed By	Robert Graddy			
Analysis Date/Time	Nov 27 2012 5:39AM			

**Hino 1B** **LIMS ID: 2012-3389**

**ICP Metals - water (Total) DUP**

**Run: 2**

Parameter	Result	DL	RL	Accuracy Control	Precision Control
Nickel	1100 ug/L	5	25		
Nickel (RPD)	24 %				0 - 20
Sodium (RPD)	7.6 %				0 - 20
Sodium	708 mg/L	0.2	0.4		
Dilution Factor	10				
Analyzed By	Robert Graddy				
Analysis Date/Time	Nov 27 2012 5:19PM				

**Hino 1B** **LIMS ID: 2012-3389**

**ICP Metals - water (Total) MS**

**Run: 1**

Parameter	Result	DL	RL	Accuracy Control	Precision Control
Aluminum (% Recovery)	59.9 %			70 - 130	
Antimony (% Recovery)	51.6 %			70 - 130	
Arsenic (% Recovery)	97.0 %			70 - 130	
Barium (% Recovery)	58.4 %			70 - 130	
Beryllium (% Recovery)	62.5 %			70 - 130	
Boron (% Recovery)	77.5 %			70 - 130	
Cadmium (% Recovery)	48.3 %			70 - 130	
Calcium (% Recovery)	99.5 %			70 - 130	

Chromium (% Recovery)	57.6 %	70 - 130
Cobalt (% Recovery)	83.6 %	70 - 130
Copper (% Recovery)	46.4 %	70 - 130
Iron (% Recovery)	46.3 %	70 - 130
Lead (% Recovery)	58.0 %	70 - 130
Magnesium (% Recovery)	87.4 %	70 - 130
Manganese (% Recovery)	82 %	70 - 130
Potassium (% Recovery)	95.6 %	70 - 130
Selenium (% Recovery)	96.7 %	70 - 130
Silver (% Recovery)	12.4 %	70 - 130
Thallium (% Recovery)	100 %	70 - 130
Vanadium (% Recovery)	89.3 %	70 - 130
Zinc (% Recovery)	38.7 %	70 - 130
Dilution Factor	1	
Analyzed By	Robert Graddy	
Analysis Date/Time	Nov 27 2012 5:45AM	

**Hino 1B** LIMS ID: 2012-3389

*ICP Metals - water (Total) MSD*

Run: 1

Parameter	Result	DL	RL	Accuracy Control	Precision Control
Aluminum (% Recovery)	61.0 %			70 - 130	
Aluminum (RPD)	1.8 %				0 - 20
Antimony (% Recovery)	52.1 %			70 - 130	
Antimony (RPD)	1.0 %				0 - 20
Arsenic (% Recovery)	93.8 %			70 - 130	
Arsenic (RPD)	2.1 %				0 - 20
Barium (% Recovery)	58.8 %			70 - 130	
Barium (RPD)	0.7 %				0 - 20
Beryllium (% Recovery)	60.9 %			70 - 130	
Beryllium (RPD)	2.7 %				0 - 20
Boron (% Recovery)	76.8 %			70 - 130	
Boron (RPD)	0.5 %				0 - 20
Cadmium (% Recovery)	47.9 %			70 - 130	
Cadmium (RPD)	0.8 %				0 - 20
Calcium (% Recovery)	99.4 %			70 - 130	
Calcium (RPD)	0 %				0 - 20
Chromium (% Recovery)	56.3 %			70 - 130	
Chromium (RPD)	2.2 %				0 - 20
Cobalt (% Recovery)	83.3 %			70 - 130	



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Ruehr@adeq.state.ar.us  
501-682-0955

Cobalt (RPD)	0.3 %		0 - 20
Copper (% Recovery)	46.6 %	70 - 130	
Copper (RPD)	0.3 %		0 - 20
Iron (% Recovery)	45.9 %	70 - 130	
Iron (RPD)	0.9 %		0 - 20
Lead (% Recovery)	57.1 %	70 - 130	
Lead (RPD)	1.6 %		0 - 20
Magnesium (% Recovery)	87.2 %	70 - 130	
Magnesium (RPD)	0.2 %		0 - 20
Manganese (% Recovery)	80 %	70 - 130	
Manganese (RPD)	0.2 %		0 - 20
Potassium (% Recovery)	95.7 %	70 - 130	
Potassium (RPD)	0 %		0 - 20
Selenium (% Recovery)	95.3 %	70 - 130	
Selenium (RPD)	1.4 %		0 - 20
Silver (% Recovery)	12.8 %	70 - 130	
Silver (RPD)	3.8 %		0 - 20
Thallium (% Recovery)	100 %	70 - 130	
Thallium (RPD)	0.2 %		0 - 20
Vanadium (% Recovery)	88.6 %	70 - 130	
Vanadium (RPD)	0.8 %		0 - 20
Zinc (% Recovery)	40.0 %	70 - 130	
Zinc (RPD)	1.4 %		0 - 20
Dilution Factor	1		
Analysis Date/Time	Nov 27 2012 5:52AM		
Analyzed By	Robert Graddy		