July 02, 2017 Service Request No:T1701026

Cliff Whitmus
AMEC Foster Wheeler E & I (Lynwood, WA)
3500 188th St SW, Suite 601
Lynwood, WA 98037

Laboratory Results for: LDW ENR/AC Pilot Study

Dear Cliff,

Enclosed are the results of the sample(s) submitted to our laboratory June 08, 2017
For your reference, these analyses have been assigned our service request number **T1701026.**

All analyses were performed according to our laboratory's quality assurance program. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the complete report. Results
apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 7102. You may also contact me via email at Wendy.Hyatt@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Wendy Hyatt
Client Services
Manager

ADDRESS 3860 S. Palo Verde Road, Suite 302, Tucson, AZ 85714
PHONE +1 520 573 1061 | FAX +1 520 573 1063
ALS Group USA, Corp.
dba ALS Environmental

Client: AMEC Foster Wheeler E & I (Lynwood, WA) **Service Request:**T1701026
Project: LDW ENR/AC Pilot Study/TBD

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
T1701026-001	LDW/BA-PC-ENRMAT-GAC	2/2/2017	1315

Chain of Custody

T1701026 5

AMEC Foster Wheeler E & I (Lynwood, WA)
LDW ENR/AC Pilot Study

ALS Environmental – Tucson
ADDRESS 3860 S. Palo Verde Road, Suite 302, Tucson, AZ 85714
PHONE +1 520 573 1061 **FAX** +1 520 573 1063
ALS Group

Work Order No.:

Project Manager:	Cliff Whitmus – see below for POC	**Bill to:**	Diane Shannon and Jessica Youngblood
Client Name:	AMEC Foster Wheeler	**Company:**	Same as Client Info
Address:	3500 188th St. SW, Suite 601	**Address:**	
City, State ZIP:	Lynnwood, WA 98037	**City, State ZIP:**	
Email:	cliff.whitmus@amecfw.com **Phone:** 425-921-4023	**Email:**	Diane.Shannon@amecfw.com, Jessica.Youngblood@amecfw.com
Project Name:	LDW ENR/AC Pilot Study		
Project Number:	TBD		
P.O. Number:			
Sampler's Name:			

SAMPLE RECEIPT

Temperature (°C):		Temp Blank Present		
Received Intact:	Yes	No	N/A	Wet Ice / Blue Ice
Cooler Custody Seals:	Yes	No	N/A	Total Containers:
Sample Custody Seals:	Yes	No	N/A	

REQUESTED ANALYSIS

Sample Identification	Matrix	Date Sampled	Time Sampled	Lab ID	No. of Containers	CHN by Combustion / IR / TC – ASTM D5373-08	Moisture, Ash & LOI by TGA – ASTM D7348-08e1	Oxygen by Pyrolysis / IR – ASTM D5373-08 Modified	Sample Prep – Air Dry & Grind <60 messh	Comments
LDW-BA-PC-ENRMAT-GAC	Solid				1	X	X	X	X	Shipping at 4 C is not needed

TAT

- [x] Routine
- [ ] Same Day *
- [ ] Next Day *
- [ ] 3 Day*
- [ ] 6 Day*

* Please call for availability. Rush charges will apply.

Due Date:

ALS Quote #42064

POC: Gretchen Heavner – gretchen.heavner@floydsnider.com #206-292-2078

RELINQUISHED BY

Print Name	Signature	Date/Time		Signature	Date/Time
FREDERICK W. GROTHKOPP	Frederick W. Grothkopp	5/31/17 11:00	Tien Nguyen	Tien Nguyen	6/1/17 09:00

Revised : 5/31/2017

3860 S. Palo Verde Road, Suite 302
Tucson, AZ 85714
T: +1 520 573 1061
F: +1 520 573 1063
www.alsglobal.com

Sample Receipt Form

T1701026 5
AMEC Foster Wheeler E & I (Lynwood, WA)
LDW ENR/AC Pilot Study

Client/Project: **AMEC Foster Wheeler** Work Order Number:

Received by: TN Date & Time: 6/1/17 0900 Matrix: Solid

Samples were received via?: FedEx Samples were received in: Cooler

Were custody seals on containers? ○ Yes ◉ No ○ NA If yes, how many and where?

If present were custody seals intact? ○ Yes ◉ No If present, were they signed and dated? ○ Yes ◉ No

Cooler Temp C	Temp Blank C	Tracking Number
ambient	na	779267496360

Packing material used? Bubble Wrap

Did all the bottles arrive in good condition (unbroken)? ◉ Yes ○ No ○ NA If No, record comments below

Did all sample labels and tags agree with COC? ◉ Yes ○ No ○ NA If No, record discrepancies below

Were all the appropriate containers and volumes received for the tests indicated? ◉ Yes ○ No ○ NA

Are samples received deemed acceptable? ◉ Yes ○ No

Comments:
1 - 80mL glass jar

Notes, discrepancies, & resolutions:

As a part of ISO 17025 protocols, ALS must notify clients that the quoted analytical methods performed by ALS may have minor modifications from the methods as published. These modifications are written into our Standard Operating Procedures and do not impact the quality of the data. Receipt of this document will be considered an acceptance of the procedures used by the laboratory for analysis unless notified by the client.
Modifications may include, but are not limited to:

- The analysis of a sample matrix that differs from that stated in the published method (example - ASTM D5865 Standard Test Method for Gross Calorific Value of Coal and Coke is used for other matrices such as biomass, Tire Derived Fuel, etc.).
- Analyzing a sample mass that differs from those in the published method (example - to accommodate samples with high concentrations of analyte, samples of limited volume, or to comply with the instrument manufacturer's operating guidelines).
- Instruments used for the analysis may differ from those listed in the published method (example - using ICP- OES when the method references flame Atomic Absorption Spectroscopy)

Client: AMEC Foster Wheeler E & I (Lynwood, WA)
3500 188th St SW, Suite 601
Lynwood, WA 98037
Attn: Cliff Whitmus
Project: T1701026

Date Received: 6/ 8/17

Certificate of Analysis

Sample ID:	Sample Date and time:	Lab #:	Moisture, Total D3173 wt%	Carbon D5373 Moist. Free wt%	Hydrogen D5373 Moist. Free wt%	Nitrogen D5373 Moist. Free wt%	Oxygen D5373 mod Moist. Free wt%	LOI 950 D7348 Moist. Free wt%	
LDW/BA-PC-ENRMAT-GAC	2/2/17 1315	T1701026-001	5.88	93.93	<0.05	0.61	1.09	98.02	

Notes:
Sample ground to < 60 mesh prior to analysis.