AP - __111__

WASTE

Date

2012 - Present

Chavez, Carl J, EMNRD

From: James Bearzi <james@glorietageo.com>
Sent: Wednesday, February 6, 2019 6:47 PM
To: potts.mark@epa.gov
Cc: 'Dougherty, Joel'; Chavez, Carl J, EMNRD; Kieling, John, NMENV; 'Larry Gandy'
Subject: [EXT] GMI Response Letter
Attachments: GMI Response to EPA.pdf

Mark –

Attached is Gandy Marley, Inc.'s letter report requested in your November 6, 2018 correspondence.

Let me know if you or your staff have any questions. Also, please let me know if you need a hardcopy. Otherwise, we'll consider this electronic version to be the correspondence of record. A reply e-mail from you or Joel acknowledging receipt would be appreciated.

Thanks again.

James

James P. Bearzi
Senior Regulatory and Environmental Specialist
Glorieta Geoscience, Inc.
1723 Second Street
Santa Fe, New Mexico 87505

505.699.2136
james@glorietageo.com

GLORIETA GEOSCIENCE, INC.
P.O. Box 5727 Santa Fe, NM 87502
(505) 983-5446 Fax (505) 983-6482
E-mail: ggi@glorietageo.com
Web Address: www.glorietageo.com

February 6, 2018 via e-mail to potts.mark@epa.gov

Mark Potts, Chief
Waste Enforcement Branch
U.S. Environmental Protection Agency Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

RE: GANDY MARLEY, INC. WASTE ACCEPTANCE FROM WESTERN REFINING CORRECTIVE ACTIONS

Dear Mr. Potts:

On behalf of Gandy Marley, Inc. (GMI), Glorieta Geoscience, Inc. (GGI) submits this letter report documenting actions taken and to be taken in response to your November 6, 2018 letter concerning GMI's acceptance of waste from Western Refining Southwest's Gallup Refinery (Western). Your letter requested that GMI: 1) document the events leading up to and including acceptance of the waste; 2) reevaluate the Waste Acceptance Criteria (WAC); and 3) develop a more robust system of determining the regulatory status of waste contemplated for acceptance at the GMI facility.

Documentation of Events and Root Cause

GGI reviewed all extant records related to the 39 roll-off bins in question, including the self-disclosure from Western's parent company, Andeavor. GGI also interviewed GMI employees and discussed the issue with New Mexico Oil Conservation Division (NMOCD) and your staff. Andeavor's account of the events that led to the acceptance of the waste at the GMI facility largely conforms with the information obtained by GGI. The waste was generated from the dissolved gas flotation portion of Western's wastewater treatment system. As the generator, Western used process knowledge to warrant on its NMOCD Form C-138 that the waste was non-hazardous and eligible for acceptance at the GMI facility, despite the fact that such wastes were in fact listed wastes (F038). GMI relies on Form C-138 to document new and existing waste streams accepted for disposal at the GMI facility. GMI acknowledges that facilities not duly permitted to accept hazardous waste are prohibited from doing so, and other than acceptance of the subject waste, has strictly adhered to this prohibition. However, process knowledge is wholly the responsibility of hazardous waste generators under state and federal law, and GMI had no reason to doubt Western's process knowledge. In sum, GMI followed its OCD permit, its own procedures, and had no way of knowing that Western intentionally or unintentionally proffered incorrect process knowledge as acceptable.

Western also submitted laboratory analysis of a (presumably) representative sample of the waste taken on June 4, 2013 to GMI, and included "RCRA Hazardous Waste Analysis" on Form C-138 as an additional basis for its determination that the waste was non-hazardous. The laboratory results were summarized in Box 4 of the Form C-138. No hazardous constituents were detected at concentrations that would exceed the criteria for hazardous wastes. However, Western submitted additional laboratory results on or after the aforementioned results were submitted. These results were of another (presumably) representative sample of the waste collected on June 7, 2013. These results were not summarized or

mentioned on the Form C-138, and contained a report of benzene concentrations above 5 mg/L. Notwithstanding the fact Western should have known the waste was listed, these results alone should have caused Western to find a different disposal pathway (i.e., a permitted hazardous waste disposal facility). Because GMI relied on the Form C-138 and the results of the June 4 sample, it did not review the results of the June 7 sample. It remains unclear why Western collected the second sample, why it did not disclose the results on the Form C-138 (it was dated after the date of the second laboratory report), why it continued to warrant the non-hazardous nature of the waste to GMI, and why it did not seek an alternate disposal pathway (e.g., permitted hazardous waste disposal facility).

GMI believes that the root cause of the disposal was Western's failure to accurately assess the process that generated the waste and apply the F038 waste code. Notwithstanding this failure, Western compounded the mistake by failing to update the Form C-138, which would have caused Western to withdraw the form and find an alternative disposal pathway for the waste. GMI has reviewed its records, and believes acceptance of this waste stream is likely the only time inappropriately characterized wastes may have been disposed of at the GMI facility.

Reevaluation of Waste Acceptance Criteria

The Waste Acceptance Criteria for the GMI facility are codified in the "Waste Acceptance Criteria" heading on page 5 of GMI's NMOCD-issued permit (Permit NM-01-0019). We believe the WAC fully and completely sets out the standards that must be met for acceptance of waste at the GMI facility. GMI nevertheless will propose to NMOCD the following additional provision that will help prevent generators from being able to submit a Form C-138 that does not reflect the actual process knowledge, sample analysis, or regulatory determination made therefrom.

- "The facility shall not accept wastes from a refinery or a pipeline regulated by the state or federal Department of Transportation unless an expert third party designated or approved by GMI has reviewed documentation of the waste stream and determined that the waste stream meets the Waste Acceptance Criteria. Such determination must be renewed annually."

Further Enhancements to Determination of Regulatory Status of Wastes

To further ensure only RCRA-exempt or non-hazardous RCRA-nonexempt wastes are accepted at the GMI facility, GMI will retain the services of third-party experts to develop and conduct annual training for employees on waste determination, process knowledge, permit requirements, and the regulatory framework under which GMI operates. GMI staff will train and adhere to the attached decision tree to ensure all waste accepted at GMI meets the WAC. Finally, GMI will no longer accept waste from Western or its parent and subsidiary companies under any circumstances.

The actions outlined in this letter will serve to ensure situations like those caused by Western's actions and inaction do not occur again, and that GMI can confirm the veracity of information contained on Form C-138 from refinery and DOT-regulated pipeline generators. GMI is committed to protection of human health and the environment, and adhering to the terms of its NMOCD permit and its requirements under state and federal law. We appreciate the opportunity to work with you and your staff, and the NMOCD, to carry out the commitments made in this letter.

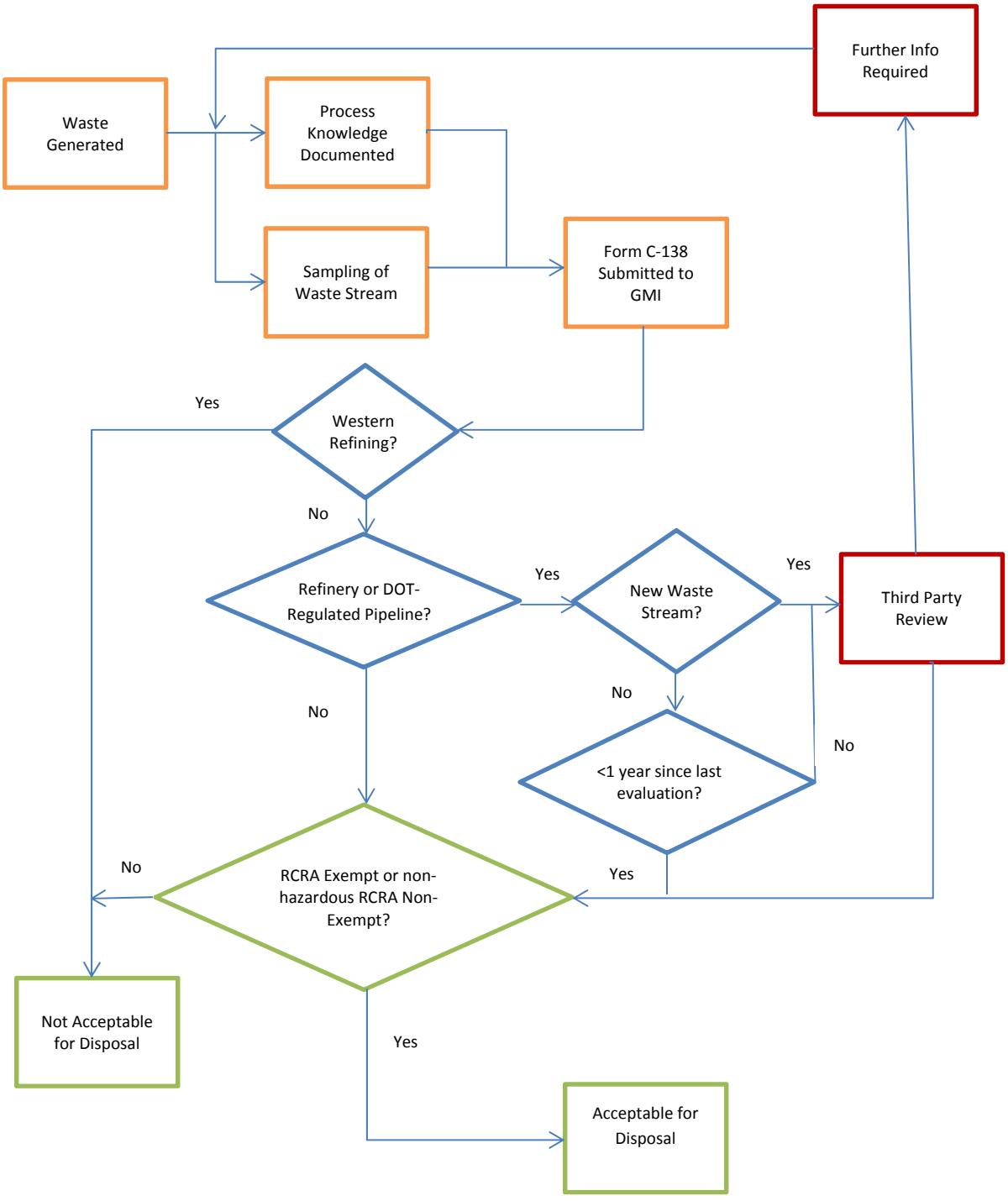
Please contact me at 505.699.2136 or at james@glorietageo.com if you have any questions.

Sincerely,

James P. Bearzi
Senior Regulatory and Environmental Specialist
Glorieta Geoscience, Inc.

Cc: L. Gandy, GMI
C. Chavez, OCD
J. Kieling, NMED HWB

GMI CAPROCK FACILITY
PROPOSED WASTE ACCEPTANCE FLOW CHART
February 6, 2019



Color Code

GMI Decision or Action

GMI or Third Part Expert Decision or Action

Generator Decision or Action

Third Party Expert Decision or Action

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Tuesday, October 09, 2012 9:21 AM
To: 'Larsen, Thurman'
Cc: Ed.Riege@wnr.com
Subject: RE: ESP DUST Particulates from ESP Unit (AP-111)

Beck:

Good morning. The ESP waste (particulate matter) associated with the FCC Unit may still qualify as a "Special Waste".

You may recall our discussion about the recent Gallup Refinery rescission from Ground Water (GW) Permit to an Abate Plan. All oil and gas regulated units become subject to the OCD Rules and Regulations. In this case, "Special Wastes" become subject to OCD Rule 35. I was recently directed by Glenn von Gonten (Acting OCD Environmental Bureau Chief) to have operators forward all "Special Waste" disposal requests to Brad Jones of the OCD- Environmental Bureau for review and approval from now on.

Therefore, please refer all "Special Waste" requests from the Gallup Refinery for disposal to Mr. Brad Jones of the OCD-Environmental Bureau for review and approval from now on. Please re-forward your recent e-mail with attached files to Brad Jones at E-mail: brad.a.jones@state.nm.us.

Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Department
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Drive, Santa Fe, New Mexico 87505
Office: (505) 476-3490
E-mail: CarlJ.Chavez@State.NM.US
Website: http://www.emnrd.state.nm.us/ocd/
"Why Not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward With the Rest of the Nation?" To see how, please go to: "Pollution Prevention & Waste Minimization" at
http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental

---

From: Larsen, Thurman [mailto:Thurman.Larsen@wnr.com]
Sent: Saturday, October 06, 2012 3:06 AM
To: Chavez, Carl J, EMNRD
Subject: ESP DUST Particulates from ESP Unit

Dear Carl,

Western (Gallup Refinery) began a turnaround on September 10, 2012. Soon after the turnaround, Western will be initiating the startup of our new Electrostatic Precipitator (ESP) to remove particulates (dust particles) from the exhaust stack of the Fluidized Catalytic Cracking Unit (FCCU). As part of this process, these newly generated particulates will be removed from the collection plates of the ESP and put into a roll-off box for disposal. Western would like to obtain approval from the Oil Conservation Division (OCD) of these non-hazardous particulates or dust particles to send to a local landfill in Thoreau, NM (NM Solid Waste Authority)(Redrock Landfill) facility. Western (Gallup Refinery) has previously been approved by the agency to dispose of FCC Catalyst into the Redrock Landfill. Western currently requesting approval of the FCC catalyst fines generated or collected from the ESP Unit.

If you should have any questions or concerns, please contact me via my office phone (505) 722-0258 or via my cell phone (505) 862-1749.

Sincerely,
Beck Larsen
Environmental Engineer
Western Refining (Gallup Refinery)

Chavez, Carl J, EMNRD

From: Larsen, Thurman <Thurman.Larsen@wnr.com>
Sent: Saturday, October 06, 2012 3:06 AM
To: Chavez, Carl J, EMNRD
Subject: ESP DUST Particulates from ESP Unit
Attachments: FCC Analysis-2010.pdf; ECI_MSDS.pdf; FCC CAT-0810443.pdf

Dear Carl,

Western (Gallup Refinery) began a turnaround on September 10, 2012. Soon after the turnaround, Western will be initiating the startup of our new Electrostatic Precipitator (ESP) to remove particulates (dust particles) from the exhaust stack of the Fluidized Catalytic Cracking Unit (FCCU). As part of this process, these newly generated particulates will be removed from the collection plates of the ESP and put into a roll-off box for disposal. Western would like to obtain approval from the Oil Conservation Division (OCD) of these non-hazardous particulates or dust particles to send to a local landfill in Thoreau, NM (NM Solid Waste Authority)(Redrock Landfill) facility. Western (Gallup Refinery) has previously been approved by the agency to dispose of FCC Catalyst into the Redrock Landfill. Western currently requesting approval of the FCC catalyst fines generated or collected from the ESP Unit.

If you should have any questions or concerns, please contact me via my office phone (505) 722-0258 or via my cell phone (505) 862-1749.

Sincerely,
Beck Larsen
Environmental Engineer
Western Refining (Gallup Refinery)

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Monday, March 15, 2010

Thurman B. Larsen
Western Refining Southwest, Gallup
Rt. 3 Box 7
Gallup, NM 87301

TEL: (505) 722-0258
FAX (505) 722-0210

RE: FCC Catalyst

Order No.: 1003056

Dear Thurman B. Larsen:

Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 3/3/2010 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. Below is a list of our accreditations. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites.

Reporting limits are determined by EPA methodology.

Please do not hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Laboratory Manager

NM Lab # NM9425 NM0901
AZ license # AZ0682
ORELAP Lab # NM100001
Texas Lab# T104704424-08-TX

4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109
505.345.3975 ■ Fax 505.345.4107
www.hallenvironmental.com

Hall Environmental Analysis Laboratory, Inc.

Date: *15-Mar-10*

CLIENT:	Western Refining Southwest, Gallup	**Client Sample ID:**	FCC Catalyst
Lab Order:	1003056	**Collection Date:**	3/1/2010 3:00:00 PM
Project:	FCC Catalyst	**Date Received:**	3/3/2010
Lab ID:	1003056-01	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
MERCURY, TCLP						Analyst: **RAGS**
Mercury	ND	0.020		mg/L	1	3/5/2010 3:57:26 PM
EPA METHOD 6010B: TCLP METALS						Analyst: **SNV**
Arsenic	ND	5.0		mg/L	1	3/14/2010 3:55:38 PM
Barium	ND	100		mg/L	1	3/14/2010 3:55:38 PM
Cadmium	ND	1.0		mg/L	1	3/14/2010 3:55:38 PM
Chromium	ND	5.0		mg/L	1	3/14/2010 3:55:38 PM
Lead	ND	5.0		mg/L	1	3/14/2010 3:55:38 PM
Selenium	ND	1.0		mg/L	1	3/14/2010 3:55:38 PM
Silver	ND	5.0		mg/L	1	3/14/2010 3:55:38 PM
VOLATILES BY 8260B/1311						Analyst: **DAM**
Benzene	ND	0.50		mg/L	1	3/4/2010 12:33:10 PM
2-Butanone	ND	10		mg/L	1	3/4/2010 12:33:10 PM
Carbon Tetrachloride	ND	0.50		mg/L	1	3/4/2010 12:33:10 PM
Chlorobenzene	ND	100		mg/L	1	3/4/2010 12:33:10 PM
Chloroform	ND	6.0		mg/L	1	3/4/2010 12:33:10 PM
1,4-Dichlorobenzene	ND	7.5		mg/L	1	3/4/2010 12:33:10 PM
1,2-Dichloroethane (EDC)	ND	0.50		mg/L	1	3/4/2010 12:33:10 PM
1,1-Dichloroethene	ND	0.70		mg/L	1	3/4/2010 12:33:10 PM
Hexachlorobutadiene	ND	0.50		mg/L	1	3/4/2010 12:33:10 PM
Tetrachloroethene (PCE)	ND	0.70		mg/L	1	3/4/2010 12:33:10 PM
Trichloroethene (TCE)	ND	0.50		mg/L	1	3/4/2010 12:33:10 PM
Vinyl chloride	ND	0.20		mg/L	1	3/4/2010 12:33:10 PM
Surr: 1,2-Dichloroethane-d4	83.7	69.9-130		%REC	1	3/4/2010 12:33:10 PM
Surr: 4-Bromofluorobenzene	111	71.2-123		%REC	1	3/4/2010 12:33:10 PM
Surr: Dibromofluoromethane	86.9	73.9-134		%REC	1	3/4/2010 12:33:10 PM
Surr: Toluene-d8	95.5	81.9-122		%REC	1	3/4/2010 12:33:10 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
NC	Non-Chlorinated	ND	Not Detected at the Reporting Limit
PQL	Practical Quantitation Limit	S	Spike recovery outside accepted recovery limits

ESC
LAB SCIENCES
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Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0014289

Est. 1970

REPORT OF ANALYSIS

Anne Thorne
Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

March 10, 2010

Date Received : March 04, 2010
Description : 1003056

Sample ID : FCC CATALYST

Collected By :
Collection Date : 03/01/10 15:00

ESC Sample # : L447744-01

Site ID :

Project # : 1003056

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Corrosivity	Non-Corrosive			9040C	03/05/10	1
Ignitability	See Footnote		Deg. F	D93/1010A	03/05/10	1
Reactive CN (SW846 7.3.3.2)	BDL	0.125	mg/kg	9012B	03/08/10	1
Reactive Sulf.(SW846 7.3.4.1)	BDL	25.	mg/kg	9034/9030B	03/08/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 03/10/10 10:34 Printed: 03/10/10 10:35
L447744-01 (IGNITABILITY) - Did Not Ignite @ 170 F

QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Gallup
Project: FCC Catalyst **Work Order:** 1003056

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: Volatiles by 8260B/1311											
Sample ID: 1003056-01a msd		*MSD*				**Batch ID: 21538**		**Analysis Date:**		**3/4/2010 1:30:14 PM**	
Benzene	0.4422	mg/L	0.20	0.4	0	111	51.1	171	14.7	0	
Chlorobenzene	0.5094	mg/L	0.20	0.4	0	127	36.1	191	10.2	0	
1,1-Dichloroethene	0.4893	mg/L	0.20	0.4	0	122	49.1	162	14.0	0	
Trichloroethene (TCE)	0.4346	mg/L	0.20	0.4	0	109	41.2	166	11.9	0	
Sample ID: mb-21538		*MBLK*				**Batch ID: 21538**		**Analysis Date:**		**3/4/2010 2:27:02 PM**	
Benzene	ND	mg/L	0.60								
2-Butanone	ND	mg/L	10								
Carbon Tetrachloride	ND	mg/L	0.60								
Chlorobenzene	ND	mg/L	100								
Chloroform	ND	mg/L	6.0								
1,4-Dichlorobenzene	ND	mg/L	7.5								
1,2-Dichloroethane (EDC)	ND	mg/L	0.60								
1,1-Dichloroethene	ND	mg/L	0.70								
Hexachlorobutadiene	ND	mg/L	0.60								
Tetrachloroethene (PCE)	ND	mg/L	0.70								
Trichloroethene (TCE)	ND	mg/L	0.60								
Vinyl chloride	ND	mg/L	0.20								
Sample ID: lcs-21538		*LCS*				**Batch ID: 21538**		**Analysis Date:**		**3/4/2010 1:58:42 PM**	
Benzene	0.3848	mg/L	0.20	0.4	0	96.2	51.1	171			
Chlorobenzene	0.5367	mg/L	0.20	0.4	0.0032	133	36.1	191			
1,1-Dichloroethene	0.4563	mg/L	0.20	0.4	0	115	49.1	162			
Trichloroethene (TCE)	0.3835	mg/L	0.20	0.4	0.0073	94.0	41.2	166			
Sample ID: 1003056-01a ms		*MS*				**Batch ID: 21538**		**Analysis Date:**		**3/4/2010 1:01:41 PM**	
Benzene	0.5125	mg/L	0.20	0.4	0	128	51.1	171			
Chlorobenzene	0.5643	mg/L	0.20	0.4	0	141	36.1	191			
1,1-Dichloroethene	0.5628	mg/L	0.20	0.4	0	141	49.1	162			
Trichloroethene (TCE)	0.4894	mg/L	0.20	0.4	0	122	41.2	166			
Method: MERCURY, TCLP											
Sample ID: 1003056-01AMSD		*MSD*				**Batch ID: 21660**		**Analysis Date:**		**3/5/2010 4:00:58 PM**	
Mercury	ND	mg/L	0.020	0.005	0	101	75	125	0	20	
Sample ID: MB-21660		*MBLK*				**Batch ID: 21660**		**Analysis Date:**		**3/5/2010 3:52:11 PM**	
Mercury	ND	mg/L	0.020	0.005	0	0	0	0			
Sample ID: LCS-21660		*LCS*				**Batch ID: 21660**		**Analysis Date:**		**3/5/2010 3:53:56 PM**	
Mercury	ND	mg/L	0.020	0.005	0	98.6	80	120			
Sample ID: 1003056-01AMS		*MS*				**Batch ID: 21660**		**Analysis Date:**		**3/5/2010 3:59:11 PM**	
Mercury	ND	mg/L	0.020	0.005	0	102	75	125			

Qualifiers:

B	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	NC	Non-Chlorinated
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Gallup
Project: FCC Catalyst **Work Order:** 1003056

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 6010B: TCLP Metals											
Sample ID: MB-21612		*MBLK*				Batch ID:	**21612**	Analysis Date:	3/14/2010 3:38:20 PM		
Arsenic	ND	mg/L	5.0								
Barium	ND	mg/L	100								
Cadmium	ND	mg/L	1.0								
Chromium	ND	mg/L	5.0								
Lead	ND	mg/L	5.0								
Selenium	ND	mg/L	1.0								
Silver	ND	mg/L	5.0								
Sample ID: LCS-21612		*LCS*				Batch ID:	**21612**	Analysis Date:	3/14/2010 3:40:46 PM		
Arsenic	ND	mg/L	5.0	0.5	0	113	80	120			
Barium	ND	mg/L	100	0.5	0.0012	102	80	120			
Cadmium	ND	mg/L	1.0	0.5	0	109	80	120			
Chromium	ND	mg/L	5.0	0.5	0	103	80	120			
Lead	ND	mg/L	5.0	0.5	0	102	80	120			
Selenium	ND	mg/L	1.0	0.5	0	118	80	120			
Silver	ND	mg/L	5.0	0.5	0	109	80	120			

Qualifiers:

B	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	NC	Non-Chlorinated
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name WESTERN REFINING GALLU | Date Received: 3/3/2010

Work Order Number 1003056 | Received by: TLS

Checklist completed by: _____ 3/3/10 | Sample ID labels checked by: AT

Signature | Date | Initials

Matrix: | Carrier name FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐	Not Shipped ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	N/A ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		Number of preserved bottles checked for pH:
Water - VOA vials have zero headspace? No VOA vials submitted ☑		Yes ☐	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	<2 >12 unless noted below.
Container/Temp Blank temperature?	3.8°	<6° C Acceptable If given sufficient time to cool.		

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

Chain-of-Custody Record

Client: WESTERN REFINING
GALLUP REFINERY
Mailing Address: RT 3 BOX 9
GALLUP NM 87301
Phone #: 5057223833
email or Fax#: 505 722 0210

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)
☐ Other
☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: FCC CATALYST
Project #:
Project Manager: THURMAN LARSEN
Sampler: ALVIN DORSEY
On Ice: ☒ Yes ☐ No
Sample Temperature: 5.2

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals (TCLP)	Anions (F,Cl,NO3,NO2,PO4,SO4)	8081 Pesticides / 8082 PCB's	8260B (VOA) (TCLP)	8270 (Semi-VOA)	RCI	Air Bubbles (Y or N)
03-01-10	3:00	Soil	FCC CATALYST	GT-JAR-2	NONE	1003056-1							X			X		X	

Date:	Time:	Relinquished by:	Received by:	Date	Time
03-02-10	12:00			3/3/10	850
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Material Data Safety Sheet

EQUILIBRIUM CATALYST, INC.

SECTION I - IDENTIFICATION

PRODUCT NAME	ISSUE DATE/ REVISION DATE
EQUILIBRIUM CATALYST (SPENT FLUID CRACKING CATALYST)	June 01, 2006
Supplier	EMERGENCY PHONE NUMBER
EQUILIBRIUM CATALYST, INC. (ECI)	1-800-424-9300 Chemtrec
ADDRESS	INFORMATION PHONE NUMBER
PO Box 73312 Metairie, LA 70033	1-504-889-2792
HAZARDOUS MATERIAL DESCRIPTION, PROPER SHIPPING NAME, HAZARD CLASS, HAZARD ID NO. (49 CFR 172.101)	ADDITIONAL HAZARD CLASSES
NOT REGULATED FOR TRANSPORTATION	NONE
CHEMICAL FAMILY & SYNONYMS	CHEMICAL FORMULA
ALUMINUM OXIDE/SILICA OXIDE	$AL_2O_3*XH_2O$

SECTION II - HAZARDOUS INGREDIENTS

CAS REGISTRY NUMBER	RTECS REGISTRY NUMBER	% WT	CHEMICAL NAMES	OSHA PEL TOTAL mg/m3	ACGIH TLV TOTAL mg/m3	OTHER LIMITS Respirable mg/m3	Listed as carcinogen NTP, IARC, or OSHA 1910 (z) (specify)
7631-86-9	VV7322000	25-80	Silica (Synthetic SiO_2)	6	10	N.E.	No
1344-28-1	BK1200000	20-75	Alumina (Al_2O_3)	10	10	5(OSHA)	No
112926-00-8	VV7322000	20-75	Silica Gel	6	10	N.E.	No
60676-86-0	OF7525000	1.0 (max)	Quartz	0.1	N.E.	N.E.	IARC (2B), NTP
Not Listed	N.E.	0.1-2.5	Sulfate	N.E.	N.E.	0.1(ACGIH)	No
68188-83-0	N.E.	0.1-10	Rare Earths (RE_2O_3)	N.E.	N.E.	N.E.	Yes
13463-67-7	VV7328000	0.1-3.0	Titanium Dioxide (TiO_2)	N.E.	10	N.E.	No
1313-59-3	XR2275000	0.2-1.5	Sodium Oxide (Na_2O)	N.E.	N.E.	N.E.	No
7440-44-0	WC4800000	0-2.0	Coke	N.E.	N.E.	N.E.	No
7439-89-6	FF250100	0.2-2.0	Iron	N.E.	N.E.	N.E.	No
7440-36-0	N.E.	0-2500 PPM	Antimony	0.5	0.5	N.E.	No
7440-50-8	CC4025000	5-1000 PPM	Copper	1(dust & mist)	1(dust & mist)	N.E.	No
7440-02-0	GL5325000	45-7000 PPM	Nickel	0.1(soluble cpds)	0.1(soluble cpds)	N.E.	IARC (2B), NTP
7440-62-2	QR5950000	45-7000 PPM	Vanadium	0.05 (dust)	0.05 (dust)	N.E.	No
7439-92-1	YW1355000	200 PPM	Lead	50 µg/m3	0.15	N.E.	IARC, NTP, OSHA

Components marked with an "" are reportable under SARA Title III Section 313 (40CFR part 372). California Proposition 65 status: This product contains ingredients known to the State of California to cause cancer, birth defects or other reproductive harm. EPA has defined zeolites as statutory mixtures consisting of silica and alumina in various proportions plus metallic oxides and certain cations.

SECTION III - PHYSICAL DATA

SPECIFIC GRAVITY	pH	BULK DENSITY	BOILING POINT
@ 2.1	3-6 (5% slurry)	0.7-1.1 g/cm3	N.E.
APPEARANCE AND ODOR		SOLUBILITY IN WATER	MELTING POINT
Off white to gray fine odorless powder.		Nil - Heavy metals may leach off in water.	2072 oC (Al_2O_3)

SECTION IV - FIRE AND EXPLOSION DATA

FLASH POINT	METHOD USED	FLAMMABLE LIMITS	LEL	UEL
NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE

BASIC FIRE FIGHTING PROCEDURES

Use extinguishing agent suitable for surrounding fire. Exposed firefighters must wear MSHA/NIOSH approved positive pressure self-contained breathing apparatus with full face mask and protective clothing. Use water spray to cool fire-exposed containers.

UNUSUAL FIRE AND EXPLOSION HAZARDS

Combustible at high temperatures. Fire may produce poisonous or irritating gas, fumes or vapors. Irritating or toxic substances may be emitted upon thermal decomposition.

SECTION V - REACTIVITY DATA

STABLE	UNSTABLE	CONDITIONS TO AVOID
X		Avoid contamination and wetting of catalyst. Avoid elevated temperatures. Avoid contact with strong oxidizers.

INCOMPATIBILITY

Incompatible with strong mineral acids, Chlorine Trifluoride, and other halogenated compounds. Thermal decomposition products may include carbon monoxide, carbon dioxide, oxides of sulfur, nickel subsulfide and nickel carbonyl.

SECTION VI - SPILL OR LEAK PROCEDURES

SPILL OR LEAK PROCEDURES

Where possible use vacuum suction for cleanup. Use dust suppressant when sweeping is necessary. Avoid methods that result in water pollution. Caution should be exercised regarding personnel safety and exposure to the spilled material, as indicated elsewhere in this data sheet. During an accidental release, personal protective equipment may be required (see Section VIII below). CERCLA reportable quantity should be calculated based on product analysis.

DISPOSAL OF SPILLED MATERIALS

Collect for disposal. Treatment, storage, transportation and disposal must be in accordance with local, state/provincial and federal regulation. Dispose of in an approved and permitted landfill. Catalyst is considered a hazardous waste in some states.

SECTION VII - HEALTH HAZARD DATA

HEALTH HAZARDS - ACUTE (PRIMARY ROUTES OF ENTRY: INHALATION, INGESTION, SKIN CONTACT AND EYE CONTACT)
SKIN: Dusts may be slightly to moderately irritating. Contact may cause reddening, itching and inflammation. Prolonged or repeated contact may cause dermatitis and allergic sensitization.
EYE: Direct contact may cause irritation, redness and pain. May also cause abrasion of the ocular surface. May cause discoloration of the eyelid and conjunctivae. Repeated or prolonged contact may cause conjunctivitis.
INGESTION: May cause liver damage & gastrointestinal disturbances. Symptoms include irritation, nausea, vomiting and diarrhea.
INHALATION: May cause respiratory tract irritation, pneumonitis and pulmonary edema. May cause an excess risk of asthmatic attacks in susceptible individuals. Fumes from heated material may cause metal fume fever, characterized by sweet or metallic taste in the mouth accompanied by dryness and irritation of the throat, cough, shortness of breath, general malaise, weakness, fatigue, muscle and joint pains, blurred vision, nose bleeds, bloody diarrhea, fever and chills. Repeated or prolonged breathing of particles of respirable size may cause inflammation of the lung leading to chest pain, difficulty breathing, coughing and possible fibrotic change in the lung - "pneumoconiosis". May cause "Siderosis" - inflammation of the lungs, chest pain, difficult breathing and coughing. Nickel metal is a pulmonary sensitizer.
HEALTH HAZARDS - CHRONIC
Elevated concentrations of aluminum have been found in brain issue of patients with Alzheimer's Disease. It is still unclear whether aluminum is the cause or merely a marker of some other disease process.
Quartz has been classified by IARC as a class 2A carcinogen. NTP, IARC and OSHA have determined that lead is a confirmed human carcinogen.
IARC has determined that there is sufficient evidence for the carcinogenicity of nickel and nickel compounds in humans. NTP has classified nickel and nickel compounds as substances that may reasonably be anticipated to be carcinogens. Animal testing indicates that nickel and nickel compounds may cause reproductive effects.
This product may contain Titanium Dioxide. IARC has determined that there is inadequate evidence for the carcinogenicity of Titanium Dioxide in humans. IARC has determined that there is limited evidence for the carcinogenicity of Titanium Dioxide in experimental animals. (IARC Class 3)
There is suggestive evidence that Yttrium compounds exert some carcinogenic activity based on oral test with laboratory animals. In animal studies Yttrium compounds have produced decreased body weights, pneumoconiosis, emphysema and enlarged lymph nodes
EMERGENCY AND FIRST AID PROCEDURES
SKIN: Remove contaminated clothing immediately. Wash area of contact thoroughly with soap and water. Get medical attention if irritation persists.
EYE: Flush immediately with large amounts of temperate potable water for at least fifteen minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Get immediate medical attention.
INHALATION: Remove affected person from source of exposure. If not breathing, ensure airway is not obstructed and administer mouth-to-mouth resuscitation and/or CPR as appropriate. If breathing is difficult, administer oxygen if available. After administration of oxygen, continue to monitor closely. Keep affected person warm and at rest. Get medical attention immediately.
INGESTION: If victim is conscious, give one to three glasses of water or milk to dilute stomach contents. Keep affected person warm and at rest. Get immediate medical attention.
NOTES TO PHYSICIAN
Persons with asthmatic-type conditions, chronic bronchitis, other respiratory diseases or recurrent skin eczema or sensitization should be excluded from working with this material. It is conceivable that trace metals could induce symptoms of dermal sensitivity.
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE
Persons with preexisting cardiovascular, skin or respiratory conditions, including asthma, may be at an increased risk from exposure.

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION
If exposure limits are to be exceeded or if irritation is experienced, NIOSH approved respiratory protection should be worn. NIOSH approved respirator for particulates with a TLV of less than 0.05 mg/m$_3$ is generally acceptable. In areas where oxygen content is less than 19.5% or where airborne concentrations of dust are high, NIOSH approved supplied air respirator should be worn. Ventilation and other forms of engineering controls are often the preferred means for controlling chemical exposures. Respiratory protection may be needed for non-routine emergency situations.
EYE/SKIN PROTECTION
Avoid eye contact with this material. Wear safety glasses or dust proof chemical goggles if airborne concentrations are high. Provide an eyewash station immediately accessible to the work area. Do not wear contact lenses when working with this material. Prevent skin contact. Wear gloves found to be impervious under conditions of use. Additional protection may be necessary to prevent skin contact including apron, arm covers, face shield, boots or full body protection. A safety deluge shower should be located in the work area.

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE
Flammable, toxic and/or corrosive gases may be found in confined vapor spaces. Do not enter confined vapor spaces without proper protective equipment. Water contamination should be avoided. Hands and face should be washed with soap and water prior to eating, drinking, smoking and application of cosmetics, and these activities should be prohibited in areas where this product is used. Contaminated work clothes should not be brought home. Empty containers may contain toxic, flammable or explosive vapors. Do not cut, grind, drill, weld, reuse or dispose of containers unless adequate precautions are taken against these hazards. Store in a well ventilated area away from sources of ignition and incompatibles. Area should be secured to prevent unauthorized access to catalyst.

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Monday, November 03, 2008

Thurman B. Larson
Western Refining Southwest, Gallup
Rt. 3 Box 7
Gallup, NM 87301

TEL: (505) 722-0258
FAX (505) 722-0210

RE: FCC Catalyst/Activated Alumina

Order No.: 0810443

Dear Thurman B. Larson:

Hall Environmental Analysis Laboratory, Inc. received 2 sample(s) on 10/22/2008 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. Below is a list of our accreditations. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425
AZ license # AZ0682
ORELAP Lab # NM100001
Texas Lab# T104704424-08-TX

Hall Environmental Analysis Laboratory, Inc.

Date: *03-Nov-08*

CLIENT:	Western Refining Southwest, Gallup	**Client Sample ID:**	Activated Alumina
Lab Order:	0810443	**Collection Date:**	10/15/2008 1:00:00 PM
Project:	FCC Catalyst/Activated Alumina	**Date Received:**	10/22/2008
Lab ID:	0810443-02	**Matrix:**	SOLID

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	440	50		mg/Kg	5	10/27/2008
Motor Oil Range Organics (MRO)	3100	250		mg/Kg	5	10/27/2008
Surr: DNOP	135	61.7-135	S	%REC	5	10/27/2008
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **DAM**
Gasoline Range Organics (GRO)	ND	50		mg/Kg	10	10/29/2008 12:52:43 AM
Surr: BFB	83.5	58.8-123		%REC	10	10/29/2008 12:52:43 AM
EPA METHOD 8021B: VOLATILES						Analyst: **DAM**
Benzene	ND	0.50		mg/Kg	10	10/29/2008 12:52:43 AM
Toluene	0.82	0.50		mg/Kg	10	10/29/2008 12:52:43 AM
Ethylbenzene	ND	0.50		mg/Kg	10	10/29/2008 12:52:43 AM
Xylenes, Total	ND	1.0		mg/Kg	10	10/29/2008 12:52:43 AM
Surr: 4-Bromofluorobenzene	73.4	66.8-139		%REC	10	10/29/2008 12:52:43 AM
EPA METHOD 8270C TCLP						Analyst: **JDC**
2,4-Dinitrotoluene	ND	0.13		mg/L	1	10/28/2008
Hexachlorobenzene	ND	0.13		mg/L	1	10/28/2008
Hexachlorobutadiene	ND	0.50		mg/L	1	10/28/2008
Hexachloroethane	ND	3.0		mg/L	1	10/28/2008
Nitrobenzene	ND	2.0		mg/L	1	10/28/2008
Pentachlorophenol	ND	100		mg/L	1	10/28/2008
Pyridine	ND	5.0		mg/L	1	10/28/2008
2,4,5-Trichlorophenol	ND	400		mg/L	1	10/28/2008
2,4,6-Trichlorophenol	ND	2.0		mg/L	1	10/28/2008
Cresols, Total	ND	200		mg/L	1	10/28/2008
Surr: 2,4,6-Tribromophenol	80.8	20.9-128		%REC	1	10/28/2008
Surr: 2-Fluorobiphenyl	78.0	18.3-119		%REC	1	10/28/2008
Surr: 2-Fluorophenol	56.8	16.6-101		%REC	1	10/28/2008
Surr: 4-Terphenyl-d14	67.4	32.3-135		%REC	1	10/28/2008
Surr: Nitrobenzene-d5	75.4	22.6-117		%REC	1	10/28/2008
Surr: Phenol-d5	61.1	8-77.9		%REC	1	10/28/2008
VOLATILES BY 8260B/1311						Analyst: **NSB**
Benzene	ND	0.50		mg/L	1	10/23/2008 11:49:43 AM
2-Butanone	ND	10		mg/L	1	10/23/2008 11:49:43 AM
Carbon Tetrachloride	ND	0.50		mg/L	1	10/23/2008 11:49:43 AM
Chlorobenzene	ND	100		mg/L	1	10/23/2008 11:49:43 AM
Chloroform	ND	6.0		mg/L	1	10/23/2008 11:49:43 AM
1,4-Dichlorobenzene	ND	7.5		mg/L	1	10/23/2008 11:49:43 AM
1,2-Dichloroethane (EDC)	ND	0.50		mg/L	1	10/23/2008 11:49:43 AM
1,1-Dichloroethene	ND	0.70		mg/L	1	10/23/2008 11:49:43 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *03-Nov-08*

CLIENT:	Western Refining Southwest, Gallup	**Client Sample ID:**	Activated Alumina
Lab Order:	0810443	**Collection Date:**	10/15/2008 1:00:00 PM
Project:	FCC Catalyst/Activated Alumina	**Date Received:**	10/22/2008
Lab ID:	0810443-02	**Matrix:**	SOLID

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
VOLATILES BY 8260B/1311						Analyst: **NSB**
Hexachlorobutadiene	ND	0.60		mg/L	1	10/23/2008 11:49:43 AM
Tetrachloroethene (PCE)	ND	0.70		mg/L	1	10/23/2008 11:49:43 AM
Trichloroethene (TCE)	ND	0.50		mg/L	1	10/23/2008 11:49:43 AM
Vinyl chloride	ND	0.20		mg/L	1	10/23/2008 11:49:43 AM
Surr: 1,2-Dichloroethane-d4	107	69.9-130		%REC	1	10/23/2008 11:49:43 AM
Surr: 4-Bromofluorobenzene	111	71.2-123		%REC	1	10/23/2008 11:49:43 AM
Surr: Dibromofluoromethane	106	73.9-134		%REC	1	10/23/2008 11:49:43 AM
Surr: Toluene-d8	99.0	81.9-122		%REC	1	10/23/2008 11:49:43 AM

Qualifiers:	*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Estimated value	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike recovery outside accepted recovery limits		

ENVIRONMENTAL SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Andy Freeman
Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

October 30,2008

Date Received : October 23, 2008
Description :

ESC Sample # : L371477-01

Sample ID : FCC CATALYST

Site ID :

Project # : 0810443

Collected By :
Collection Date : 10/15/08 13:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Corrosivity	Non-Corrosive			9040C	10/25/08	1
Ignitability	See Footnote		Deg. F	D93/1010A	10/28/08	1
Reactive CN (SW846 7.3.3.2)	BDL	0.125	mg/kg	9012B	10/29/08	1
Reactive Sulf.(SW846 7.3.4.1)	BDL	25.	mg/kg	9034/9030B	10/29/08	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

Reported: 10/30/08 08:29 Printed: 10/30/08 08:29
L371477-01 (IGNITABILITY) - Did Not Ignite @ 170f

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Est. 1970

REPORT OF ANALYSIS

Andy Freeman
Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

October 30, 2008

ESC Sample # : L371477-02

Site ID :

Project : 0810443

Date Received : October 23, 2008
Description :

Sample ID : ACTIVATED ALUMINA

Collected By :
Collection Date : 10/15/08 13:00

Parameter	Result	Det. Limit	Units	Limit	Method	Date/Time	By	Dil
TCLP Extraction	-				1311	10/25/08 0915	MVE	1
Mercury	BDL	0.0010	mg/l	0.20	7470A	10/27/08 1131	KBW	1
Arsenic	BDL	0.050	mg/l	5.0	6010B	10/29/08 0845	LRL	1
Barium	0.37	0.15	mg/l	100	6010B	10/29/08 0845	LRL	1
Cadmium	BDL	0.050	mg/l	1.0	6010B	10/29/08 0845	LRL	1
Chromium	BDL	0.050	mg/l	5.0	6010B	10/29/08 0845	LRL	1
Lead	BDL	0.050	mg/l	5.0	6010B	10/29/08 0845	LRL	1
Selenium	BDL	0.050	mg/l	1.0	6010B	10/29/08 0845	LRL	1
Silver	BDL	0.050	mg/l	5.0	6010B	10/29/08 0845	LRL	1

BDL - Below Detection Limit
Det. Limit - Estimated Quantitation Limit(EQL)
Limit - Maximum Contaminant Level as established by the US EPA
Note:
The reported analytical results relate only to the sample submitted.

Reported: 10/30/08 08:29 Printed: 10/30/08 08:29

ENVIRONMENTAL SCIENCE CORP.

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Est. 1970

REPORT OF ANALYSIS

Andy Freeman
Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

October 30, 2008

Date Received : October 23, 2008
Description :

ESC Sample # : L371477-03

Sample ID : ACTIVATED ALUMINA

Site ID :

Project # : 0810443

Collected By :
Collection Date : 10/15/08 13:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Corrosivity	Non-Corrosive			9040C	10/25/08	1
Ignitability	See Footnote		Deg. F	D93/1010A	10/28/08	1
Reactive CN (SW846 7.3.3.2)	BDL	0.125	mg/kg	9012B	10/29/08	1
Reactive Sulf.(SW846 7.3.4.1)	BDL	25.	mg/kg	9034/9030B	10/29/08	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

Reported: 10/30/08 08:29 Printed: 10/30/08 08:29
L371477-03 (IGNITABILITY) - Did Not Ignite @ 170f

QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Gallup
Project: FCC Catalyst/Activated Alumina **Work Order:** 0810443

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8015B: Diesel Range Organics									
Sample ID: MB-17444		*MBLK*			Batch ID:	**17444**	Analysis Date:		10/27/2008
Diesel Range Organics (DRO)	ND	mg/Kg	10						
Motor Oil Range Organics (MRO)	ND	mg/Kg	50						
Sample ID: LCS-17444		*LCS*			Batch ID:	**17444**	Analysis Date:		10/27/2008
Diesel Range Organics (DRO)	37.01	mg/Kg	10	74.0	64.6	116			
Sample ID: LCSD-17444		*LCSD*			Batch ID:	**17444**	Analysis Date:		10/27/2008
Diesel Range Organics (DRO)	32.79	mg/Kg	10	65.6	64.6	116	12.1	17.4	
Method: EPA Method 8015B: Gasoline Range									
Sample ID: MB-17437		*MBLK*			Batch ID:	**17437**	Analysis Date:		10/29/2008 3:24:26 AM
Gasoline Range Organics (GRO)	ND	mg/Kg	5.0						
Sample ID: LCS-17437		*LCS*			Batch ID:	**17437**	Analysis Date:		10/29/2008 1:53:20 AM
Gasoline Range Organics (GRO)	22.29	mg/Kg	5.0	78.8	69.5	120			
Method: EPA Method 8021B: Volatiles									
Sample ID: MB-17437		*MBLK*			Batch ID:	**17437**	Analysis Date:		10/29/2008 3:24:26 AM
Benzene	ND	mg/Kg	0.050						
Toluene	ND	mg/Kg	0.050						
Ethylbenzene	ND	mg/Kg	0.050						
Xylenes, Total	ND	mg/Kg	0.10						
Sample ID: LCS-17437		*LCS*			Batch ID:	**17437**	Analysis Date:		10/29/2008 1:53:20 AM
Benzene	0.2858	mg/Kg	0.050	102	78.8	132			
Toluene	1.939	mg/Kg	0.050	96.9	78.9	112			
Ethylbenzene	0.4068	mg/Kg	0.050	102	69.3	125			
Xylenes, Total	2.314	mg/Kg	0.10	101	73	128			

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Gallup
Project: FCC Catalyst/Activated Alumina **Work Order:** 0810443

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: Volatiles by 8260B/1311									
Sample ID: mb-17442		*MBLK*			Batch ID:	**17442**	Analysis Date:	10/23/2008 3:00:43 PM	
Benzene	ND	mg/L	0.50						
2-Butanone	ND	mg/L	10						
Carbon Tetrachloride	ND	mg/L	0.50						
Chlorobenzene	ND	mg/L	100						
Chloroform	ND	mg/L	6.0						
1,4-Dichlorobenzene	ND	mg/L	7.5						
1,2-Dichloroethane (EDC)	ND	mg/L	0.50						
1,1-Dichloroethene	ND	mg/L	0.70						
Hexachlorobutadiene	ND	mg/L	0.50						
Tetrachloroethene (PCE)	ND	mg/L	0.70						
Trichloroethene (TCE)	ND	mg/L	0.50						
Vinyl chloride	ND	mg/L	0.20						
Sample ID: lcs-17442		*LCS*			Batch ID:	**17442**	Analysis Date:	10/23/2008 2:28:23 PM	
Benzene	ND	mg/L	0.50	116	51.1	171			
Chlorobenzene	ND	mg/L	100	110	36.1	191			
1,1-Dichloroethene	ND	mg/L	0.70	110	49.1	162			
Trichloroethane (TCE)	ND	mg/L	0.50	113	41.2	166			

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Gallup
Project: FCC Catalyst/Activated Alumina **Work Order:** 0810443

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8270C TCLP									
Sample ID: mb-17472		*MBLK*			Batch ID:	17472	Analysis Date:		10/28/2008
2,4-Dinitrotoluene	ND	mg/L	0.13						
Hexachlorobenzene	ND	mg/L	0.13						
Hexachlorobutadiene	ND	mg/L	0.50						
Hexachloroethane	ND	mg/L	3.0						
Nitrobenzene	ND	mg/L	2.0						
Pentachlorophenol	ND	mg/L	100						
Pyridine	ND	mg/L	5.0						
2,4,5-Trichlorophenol	ND	mg/L	400						
2,4,6-Trichlorophenol	ND	mg/L	2.0						
Cresols, Total	ND	mg/L	200						
Sample ID: lcs-17472		*LCS*			Batch ID:	17472	Analysis Date:		10/28/2008
2,4-Dinitrotoluene	0.07522	mg/L	0.010	75.2	29.8	99.8			
Hexachlorobenzene	0.04776	mg/L	0.010	47.8	29.6	111			
Hexachlorobutadiene	0.06362	mg/L	0.010	63.6	21.6	89.6			
Hexachloroethane	0.06206	mg/L	0.010	62.1	12.1	99.7			
Nitrobenzene	0.07022	mg/L	0.010	70.2	28.1	110			
Pentachlorophenol	0.05104	mg/L	0.010	51.0	6.48	109			
Pyridine	0.05086	mg/L	0.010	50.9	1.11	76.5			
2,4,5-Trichlorophenol	0.05854	mg/L	0.010	58.5	20.6	106			
2,4,6-Trichlorophenol	0.06126	mg/L	0.010	61.3	19.8	106			
Cresols, Total	0.1923	mg/L	0.010	64.1	18.4	84.3			
Sample ID: lcsd-17472		*LCSD*			Batch ID:	17472	Analysis Date:		10/28/2008
2,4-Dinitrotoluene	0.07878	mg/L	0.010	78.8	29.8	99.8	4.62	27.8	
Hexachlorobenzene	0.04696	mg/L	0.010	47.0	29.6	111	1.69	36.1	
Hexachlorobutadiene	0.06576	mg/L	0.010	65.8	21.6	89.6	3.31	39.1	
Hexachloroethane	0.06364	mg/L	0.010	63.6	12.1	99.7	2.51	57.2	
Nitrobenzene	0.06976	mg/L	0.010	69.8	28.1	110	0.657	44.7	
Pentachlorophenol	0.05192	mg/L	0.010	51.9	6.48	109	1.71	24.7	
Pyridine	0.04474	mg/L	0.010	44.7	1.11	76.5	12.8	77.5	
2,4,5-Trichlorophenol	0.06036	mg/L	0.010	60.4	20.6	106	3.06	34.6	
2,4,6-Trichlorophenol	0.06328	mg/L	0.010	63.3	19.8	106	3.24	32.8	
Cresols, Total	0.1809	mg/L	0.010	60.3	18.4	84.3	6.11	46.3	

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name WESTERN REFINING GALLU Date Received: 10/22/2008

Work Order Number 0810443 Received by: TLS

Checklist completed by: _____ 10/22/08 Sample ID labels checked by: AS

Signature Date Initials

Matrix: Carrier name FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐	Not Shipped ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	N/A ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Water - VOA vials have zero headspace? No VOA vials submitted ☑		Yes ☐	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	
Container/Temp Blank temperature?	6°	*<6° C Acceptable* If given sufficient time to cool.		

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

Chain-of-Custody Record

Client: WESTERN - REFINING
Gallup Refinery
Address: RT 3 Box 9
Gallup NM 87301
Phone #: 505 722 3227
email or Fax#: 505 722 3833
QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)
☐ Other
☐ EDD (Type)

Turn-Around Time:
☐ Standard ☒ Rush
Project Name: FCC CATALYST.
ACTIVATED ALUMINA
Project #:
Project Manager: THURMAN LARSEN
Sampler: ALVIN DORSEY
On Ice: ☐ Yes ☐ No
Sample Temperature: °C

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8260)	8310 (PNA or PAH)	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	RCI	TCLP Metal, Volatiles	TCLP Semi, Volatiles	TPH, BTEX	Air Bubbles (Y or N)
10-15-08	1330	FCC CATALYST	1-QT	N/A	0810443-1												X				
10-15-08	1300	ACTIVATED ALUMINA	2-QT	N/A	-2												X	X	X	X	

Date	Time	Relinquished by:	Received by:	
10-15-08		Alvin Dorsey		
				920
				10/22/08

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Chavez, Carl J, EMNRD

From: Riege, Ed <Ed.Riege@wnr.com>
Sent: Saturday, October 06, 2012 8:07 AM
To: Chavez, Carl J, EMNRD
Cc: Larsen, Thurman
Subject: FW: ESP Dust
Attachments: 201209270749.pdf

Carl,
The Gallup refinery will soon be placing into service a new electrostatic precipitator (ESP) to reduce particulate matter to the atmosphere off the FCC. This ESP will generate a new waste stream comprised of fine catalyst particulate. Attached is a past analysis of FCC catalyst which will be similar to the new ESP dust, indicating it is non hazardous. Gallup would like to receive your approval to dispose of this waste stream at the local NWNM Regional Solid Waste – Redrock Landfill in Thoreau.

Thanks
Ed Riege

Ed Riege MPH
Environmental Manager

Western Refining
Gallup Refinery
Route 3 Box 7
Gallup, NM 87301
(505) 722-0217
ed.riege@wnr.com

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Monday, March 15, 2010

Thurman B. Larsen
Western Refining Southwest, Gallup
Rt. 3 Box 7
Gallup, NM 87301

TEL: (505) 722-0258
FAX (505) 722-0210

RE: FCC Catalyst

Order No.: 1003056

Dear Thurman B. Larsen:

Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 3/3/2010 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. Below is a list of our accreditations. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites.

Reporting limits are determined by EPA methodology.

Please do not hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Laboratory Manager

NM Lab # NM9425 NM0901
AZ license # AZ0682
ORELAP Lab # NM100001
Texas Lab# T104704424-08-TX

Hall Environmental Analysis Laboratory, Inc.

Date: *15-Mar-10*

CLIENT:	Western Refining Southwest, Gallup	**Client Sample ID:**	FCC Catalyst
Lab Order:	1003056	**Collection Date:**	3/1/2010 3:00:00 PM
Project:	FCC Catalyst	**Date Received:**	3/3/2010
Lab ID:	1003056-01	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
MERCURY, TCLP						Analyst: **RAGS**
Mercury	ND	0.020		mg/L	1	3/5/2010 3:67:26 PM
EPA METHOD 6010B: TCLP METALS						Analyst: **SNV**
Arsenic	ND	5.0		mg/L	1	3/14/2010 3:55:38 PM
Barium	ND	100		mg/L	1	3/14/2010 3:55:38 PM
Cadmium	ND	1.0		mg/L	1	3/14/2010 3:55:38 PM
Chromium	ND	5.0		mg/L	1	3/14/2010 3:55:38 PM
Lead	ND	5.0		mg/L	1	3/14/2010 3:55:38 PM
Selenium	ND	1.0		mg/L	1	3/14/2010 3:55:38 PM
Silver	ND	5.0		mg/L	1	3/14/2010 3:55:38 PM
VOLATILES BY 8260B/1311						Analyst: **DAM**
Benzene	ND	0.50		mg/L	1	3/4/2010 12:33:10 PM
2-Butanone	ND	10		mg/L	1	3/4/2010 12:33:10 PM
Carbon Tetrachloride	ND	0.50		mg/L	1	3/4/2010 12:33:10 PM
Chlorobenzene	ND	100		mg/L	1	3/4/2010 12:33:10 PM
Chloroform	ND	6.0		mg/L	1	3/4/2010 12:33:10 PM
1,4-Dichlorobenzene	ND	7.5		mg/L	1	3/4/2010 12:33:10 PM
1,2-Dichloroethane (EDC)	ND	0.50		mg/L	1	3/4/2010 12:33:10 PM
1,1-Dichloroethene	ND	0.70		mg/L	1	3/4/2010 12:33:10 PM
Hexachlorobutadiene	ND	0.50		mg/L	1	3/4/2010 12:33:10 PM
Tetrachloroethene (PCE)	ND	0.70		mg/L	1	3/4/2010 12:33:10 PM
Trichloroethene (TCE)	ND	0.50		mg/L	1	3/4/2010 12:33:10 PM
Vinyl chloride	ND	0.20		mg/L	1	3/4/2010 12:33:10 PM
Surr: 1,2-Dichloroethane-d4	83.7	69.9-130		%REC	1	3/4/2010 12:33:10 PM
Surr: 4-Bromofluorobenzene	111	71.2-123		%REC	1	3/4/2010 12:33:10 PM
Surr: Dibromofluoromethane	86.9	73.9-134		%REC	1	3/4/2010 12:33:10 PM
Surr: Toluene-d8	96.5	81.9-122		%REC	1	3/4/2010 12:33:10 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
NC	Non-Chlorinated	ND	Not Detected at the Reporting Limit
PQL	Practical Quantitation Limit	S	Spike recovery outside accepted recovery limits

ESC
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Est. 1970

REPORT OF ANALYSIS

Anne Thorne
Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

March 10, 2010

Date Received : March 04, 2010
Description : 1003056

ESC Sample # : L447744-01

Site ID :

Sample ID : FCC CATALYST

Project # : 1003056

Collected By :
Collection Date : 03/01/10 15:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Corrosivity	Non-Corrosive			9040C	03/05/10	1
Ignitability	See Footnote		Deg. F	D93/1010A	03/05/10	1
Reactive CN (SW846 7.3.3.2)	BDL	0.125	mg/kg	9012B	03/08/10	1
Reactive Sulf.(SW846 7.3.4.1)	BDL	25.	mg/kg	9034/9030B	03/08/10	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

Reported: 03/10/10 10:34 Printed: 03/10/10 10:35
L447744-01 (IGNITABILITY) - Did Not Ignite @ 170 F

QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Gallup
Project: FCC Catalyst **Work Order:** 1003056

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: Volatiles by 8260B/1311											
Sample ID: 1003056-01a msd		*MSD*				Batch ID:	**21538**	Analysis Date:		3/4/2010 1:30:14 PM	
Benzene	0.4422	mg/L	0.20	0.4	0	111	51.1	171	14.7	0	
Chlorobenzene	0.5094	mg/L	0.20	0.4	0	127	36.1	191	10.2	0	
1,1-Dichloroethene	0.4893	mg/L	0.20	0.4	0	122	49.1	162	14.0	0	
Trichloroethene (TCE)	0.4346	mg/L	0.20	0.4	0	109	41.2	166	11.9	0	
Sample ID: mb-21538		*MBLK*				Batch ID:	**21538**	Analysis Date:		3/4/2010 2:27:02 PM	
Benzene	ND	mg/L	0.50								
2-Butanone	ND	mg/L	10								
Carbon Tetrachloride	ND	mg/L	0.50								
Chlorobenzene	ND	mg/L	100								
Chloroform	ND	mg/L	6.0								
1,4-Dichlorobenzene	ND	mg/L	7.5								
1,2-Dichloroethane (EDC)	ND	mg/L	0.50								
1,1-Dichloroethene	ND	mg/L	0.70								
Hexachlorobutadiene	ND	mg/L	0.50								
Tetrachloroethene (PCE)	ND	mg/L	0.70								
Trichloroethene (TCE)	ND	mg/L	0.50								
Vinyl chloride	ND	mg/L	0.20								
Sample ID: lcs-21538		*LCS*				Batch ID:	**21538**	Analysis Date:		3/4/2010 1:58:42 PM	
Benzene	0.3848	mg/L	0.20	0.4	0	96.2	51.1	171			
Chlorobenzene	0.5367	mg/L	0.20	0.4	0.0032	133	36.1	191			
1,1-Dichloroethene	0.4583	mg/L	0.20	0.4	0	115	49.1	162			
Trichloroethene (TCE)	0.3835	mg/L	0.20	0.4	0.0073	94.0	41.2	166			
Sample ID: 1003056-01a ms		*MS*				Batch ID:	**21538**	Analysis Date:		3/4/2010 1:01:41 PM	
Benzene	0.5125	mg/L	0.20	0.4	0	128	51.1	171			
Chlorobenzene	0.5843	mg/L	0.20	0.4	0	141	36.1	191			
1,1-Dichloroethene	0.5628	mg/L	0.20	0.4	0	141	49.1	162			
Trichloroethene (TCE)	0.4894	mg/L	0.20	0.4	0	122	41.2	166			
Method: MERCURY, TCLP											
Sample ID: 1003056-01AMSD		*MSD*				Batch ID:	**21560**	Analysis Date:		3/5/2010 4:00:58 PM	
Mercury	ND	mg/L	0.020	0.005	0	101	75	125	0	20	
Sample ID: MB-21560		*MBLK*				Batch ID:	**21560**	Analysis Date:		3/5/2010 3:52:11 PM	
Mercury	ND	mg/L	0.020	0.005	0	0	0	0			
Sample ID: LCS-21560		*LCS*				Batch ID:	**21560**	Analysis Date:		3/5/2010 3:53:55 PM	
Mercury	ND	mg/L	0.020	0.005	0	98.6	80	120			
Sample ID: 1003056-01AMS		*MS*				Batch ID:	**21560**	Analysis Date:		3/5/2010 3:59:11 PM	
Mercury	ND	mg/L	0.020	0.005	0	102	75	125			

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	NC	Non-Chlorinated
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Gallup
Project: FCC Catalyst **Work Order:** 1003056

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 6010B: TCLP Metals											
Sample ID: MB-21612		*MBLK*				**Batch ID: 21612**		**Analysis Date: 3/14/2010 3:38:20 PM**			
Arsenic	ND	mg/L	5.0								
Barium	ND	mg/L	100								
Cadmium	ND	mg/L	1.0								
Chromium	ND	mg/L	5.0								
Lead	ND	mg/L	5.0								
Selenium	ND	mg/L	1.0								
Silver	ND	mg/L	5.0								
Sample ID: LCS-21612		*LCS*				**Batch ID: 21612**		**Analysis Date: 3/14/2010 3:40:46 PM**			
Arsenic	ND	mg/L	5.0	0.5	0	113	80	120			
Barium	ND	mg/L	100	0.5	0.0012	102	80	120			
Cadmium	ND	mg/L	1.0	0.5	0	109	80	120			
Chromium	ND	mg/L	5.0	0.5	0	103	80	120			
Lead	ND	mg/L	5.0	0.5	0	102	80	120			
Selenium	ND	mg/L	1.0	0.5	0	118	80	120			
Silver	ND	mg/L	5.0	0.5	0	109	80	120			

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	NC	Non-Chlorinated
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name WESTERN REFINING GALLU | Date Received: 3/3/2010

Work Order Number 1003056 | Received by: TLS

Checklist completed by: _____ 3/3/10 | Sample ID labels checked by: AT

Signature | Date | Initials

Matrix: | Carrier name FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐	Not Shipped ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	N/A ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		Number of preserved bottles checked for pH:
Water - VOA vials have zero headspace? No VOA vials submitted ☑		Yes ☐	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	*<2 >12 unless noted below.*
Container/Temp Blank temperature?	**3.8°**	*<6° C Acceptable* If given sufficient time to cool.		

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

Cha -of-Custody Record

Client: WESTERN REFINING
GALLUP REFINERY
Mailing Address: RT 3 BOX 9
GALLUP NM 87301
Phone #: 5057223833
email or Fax#: 505 722 0210

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)
☐ Other
☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: FCC CATALYST
Project #:
Project Manager: THURMAN LARSEN
Sampler: ALVIN DORSEY
On Ice: ☒ Yes ☐ No
Sample Temperature: 5.8°

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals (TCLP)	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA) (TCLP)	8270 (Semi-VOA)	RCI				Air Bubbles (Y or N)
03-01-10	3:00	Soil	FCC CATALYST	GT-JAR-2	NONE	1003056-1							X			X		X				

Date	Time	Relinquished by:	Received by:	Date	Time
03-02-10	12:00	Alvin Dorsey			
				3/3/10	850

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.