State of New Mexico Energy Minerals and Natural Resources

> Oil Conservation Division 1220 South St. Francis Dr. Santa Fe. NM 87505

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

1220 S. St. Fran	cis Dr., Santa	a Fe, NM 8750	5			ii St. Flanc Se, NM 875							
			Rele	ease Notific				e Ac	tion				
						OPERA					al Report	\boxtimes	Final Report
Name of Company: CHEVRON U.S.A. Inc.						Contact: Edem Sededji						T mar report	
Address: 56 Texas Camp Road, Lovington NM 88260						Telephone N	No.: Office:	(575)	396-4	4414 Mot	oile: (432) 2	234-44	37
Facility Name: Skelly Unit 936						Facility Typ	e: Productio	on We	ell				
Surface Ow	ner: Feder	al		Mineral C)wner:	State of Nev	Mexico	API	No. 3	0-015-32	595 / Lease	No.	NM-98122
						N OF REI							
Unit Letter	Section	Township	Range	Feet from the		/South Line	Feet from t	he	East/W	Vest Line	County		
D		17.00											
D	21	17.0S	31E								Eddy		
				Latitude		Longitud	e						
					URE	OF REL	EASE						
		Oil and produ	ced Water	Spill			Release: 8.6 b		uid		Recovered: l		
Source of Re	Source of Release: Flow Line						our of Occurr	ence:	ĺ		Hour of Dis	covery	:
Was Immediate Notice Given?						01/24/12 10 If YES, To Y				01/24/12	11:00 AM	-	
Yes No Not Required					uired		via voicemai	1					
By Whom? David Pagano					Date and Ho	our:							
Was a Watercourse Reached?				If YES, Vol	ume Impactii	ng the	Water	course.					
🗌 Yes 🛛 No													
If a Watercou N/A	irse was Im	pacted, Descr	ibe Fully.	*		· · · · ·							
Describe Cau	se of Proble	em and Reme	dial Actio	n Taken.*									
Chemical rep approximatel	notified pu y 11:00 AN	mper of spill	to land at	snagged out poly p 10:45 and pumpe	gas line r imme	, causing 8.6 b diately drove t	bls fluid spil o well and sh	ll, mos 1ut wel	tly oil ll in to	with a sma contain re	Il amount of lease. Well s	f produ shut in	ced water. at
Approx. 8.6 t vacuumed up and road and	bbls of fluid standing lie contaminat	quid on pad a ed soil was ta	illed on pa nd road. C ken offsite	ken.* ad and worked its Chevron received A e for disposal. Spr plaze to remediate	Archeol ay off o	logical/wildlife	e clearance fr	om BI	LM. Ba	ackhoe exc	avated conta	aminate	ed soil on pad
Two discrete soils. These s	soil confirm ampling res	nation sample sults indicated	s were col the prese	llected from the bandle of chloride co	ase of t	he excavation ations in shallo	before the ex w soils at lev	cavate vels of	ed area regula	was repor tory conce	tedly backfil rn.	lled wit	h imported
In response to	these result	lts, an additio	nal site as:	sessment was con	ducted	to confirm the	extent of soi	il impa	icts.				
Analytical re-	sults of the	additional ass	ecoment o	re attached									
I hereby certi regulations al public health should their c or the environ	fy that the i l operators or the envir operations h nment. In a	nformation gi are required to ronment. The ave failed to a	ven above o report ar acceptanc idequately OCD accep	e is true and comp nd/or file certain r ce of a C-141 repo v investigate and r otance of a C-141	elease r ort by th emedia	notifications an ne NMOCD m te contaminati	nd perform co arked as "Fin on that pose a	orrecti al Rep a threa	ve acti port" de it to gre	ons for rele oes not reli ound water	eases which ieve the oper r, surface wa	may er rator of iter, hu	ndanger Tliability man health
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Printed Name	: Luke Wel	ch		<u> </u>		Approved by	Environmen	tal Spe	ecialist	•			
Title: Project	Manager					Approval Dat	e:		E	Expiration	Date:		
E-mail Addre	ss: LWelcl	h@chevron.co	m			Conditions of	Approval:				Attached		
Date: B/I Attach Addit	z/14 tional Shee	ets If Necess		: (713) 372-0292									



Mr. Luke Welch Project Manager Chevron Environmental Management Company 1400 Smith Street, Room 07069B Houston, Texas 77002

Subject: Site Assessment Report Skelly Unit #936 Eddy County, New Mexico

Dear Mr. Welch:

On behalf of Chevron Environmental Management Company (CEMC), ARCADIS U.S., Inc. (ARCADIS) prepared this Site Assessment Report (report) to document cleanup actions and soil sampling activities performed in response to a release of approximately 8.6 barrels (bbls) of oil mixed with a small quantity of produced water that occurred at the Skelly Unit (SKU) #936 located in Eddy County, New Mexico (site; Figure 1).

To evaluate the potential for this release to impact groundwater, a Site Conceptual Model was developed (Attachment 1). Potential impacts to groundwater are not considered possible due to the following:

- The volume of material released was relatively small (8.6 total bbls);
- Response activities included removal of liquids and impacted surface soil;
- Local climatic conditions are not conducive to leaching due to low rainfall and high evapotranspiration;
- The presence of a caliche layer impedes the vertical migration of liquids; and
- Groundwater is encountered at significant depth (263 feet below ground surface).
- Based on geochemical modeling using USEPA Multimedia Exposure Assessment Model (MULTIMED) Version 2.0 (USEPA 1996), a significantly larger release would be necessary to cause an exceedance of regulatory criteria in groundwater.

ARCADIS U.S., Inc. 2929 Briarpark Drive Suite 300 Houston Texas 77042 Tel 713 953 4800 Fax 713 977 4620 www.arcadis-us.com

ENVIRONMENT

^{Date:} July 29, 2014

Contact: Jonathan Olsen

Phone: 713.953.4874

^{Email:} Jonathan.Olsen@ arcadis-us.com

Our ref: B0048607.0000



This report describes spill response activities for a release that occurred on January 24, 2012 and follow-up soil assessment activities that occurred on November 4 and 5, 2013.

Background Information

This section summarizes the site location and description, as well as the regional setting including geology, hydrogeology, nearby drinking water wells, surface water, and climate.

Site Location and Description

The site is located within the Chevron-operated Vacuum Unit approximately 30 miles southeast of Artesia, New Mexico. New Mexico Highway 82 (Lovington Highway) is located approximately 0.8 mile south of the site.

The site is located in the western edge of the Permian Basin, a 75,000-square-mile area in west Texas and New Mexico that is populated by numerous oil and gas production wells. In New Mexico, the Permian Basin is bounded by the Texas state lines to the south and east, by Roosevelt County to the north, and Chavez County to the west. Artesia (the closest town) is approximately 30 miles northwest of the site and the closest agricultural area is more than 25 miles west of the site.

The site is located directly north of the SKU #936 wellhead. The release described below occurred mostly on the well pad. A photolog of the site is included as Attachment 2.

Nearby Water Wells and Surface Water

In November 2013, ARCADIS field verified that no surface-water bodies are located within 1,000 feet of the site. Based on satellite imagery, no surface-water bodies were identified within 3 miles of the site (GoogleEarth 2014).

In June 2014, ARCADIS reviewed information obtained from the New Mexico Office of the State Engineer (NMOSE) online database (NMOSE 2011), which indicates that no water-supply wells are located within 1,000 feet of the site. The NMOSE online database identified four petroleum-industry-related water-supply wells (NMOSE 2011). A petroleum-industry-related water supply well, located approximately 2.1 miles south (i.e., hydraulically crossgradient) of the site was identified as the closest well to the site.



Climate

Monthly average temperatures near the site vary from a minimum of 23.5 degrees Fahrenheit (°F) in January to a maximum of 94.8°F in July (Western Regional Climate Center (WRCC) Artesia, New Mexico (290600) weather station). Total average precipitation in the area of the site recorded from the available WRCC period of record between 1914 and 2005 was approximately 11.90 inches per year (WRCC 2014a).

Due to the arid climate, the site experiences low precipitation and high evapotranspiration rates. The total average evapotranspiration from the available WRCC period of record between 1914 and 2005 was approximately 87.68 inches per year (WRCC 2014b).

Regional Geology and Hydrogeology

The site elevation is approximately 3,750 feet above mean sea level and is located in the Querecho Plains immediately west of the Mescalero Ridge, which demarcates the western boundary of the (Miocene to Pliocene) High Plains Ogallala Formation (Reeves 1972; and Nicholson and Clebsch 1961). A rapid drop in elevation of 200 to 250 feet occurs west of the northwest-trending Mescalero Ridge, located approximately 6 miles northeast of the site.

The Querecho Plain is 80 percent covered by a moderately stable dune field (Reeves 1972) that is deposited on top of Triassic Dockum red beds. The red bed surface, which is 400,000 to 500,000 years old, is relatively flat with minor erosional incisions in an area of regionally variable topography in the context of the Mescalero Ridge and an elongate, southwestward-trending depression associated with the Cedar Lake Draw. The site is located in the headwaters of the draw. The red beds in the area typically have a 3- to 13-foot-thick near-surface caliche layer (Bachman 1980). The stabilized dune field is deposited on this surface.

Deposition of sand and the formation of the dune field began 60,000 years ago, with additional development beginning 9,000 years ago (Hall 2002). The surface and interior of these dunes do not contain caliche; however, a 1-foot layer of caliche is common at the bottom of the dunes at the contact with the red bed surface.

Groundwater near the site is encountered in the Dockum Group, at a depth of approximately 263 feet bgs (NMOSE 2014; Attachment 3). Compared to the Ogallala Formation to the west of the site, the Dockum Group groundwater is not a major



resource in the area, with poor potential water production rates and elevated natural dissolved solids.

Water supply wells in central Eddy County and near the site, as discussed in the Nearby Water Wells and Surface Water section of this report, are completed in underlying Triassic age sandstone units of the Dockum Group that outcrop on the surface of the Querecho Plains in this area. Based on topography, with the surface elevation dropping from 3,750 feet to 3,320 feet at the Pecos River 33 miles to the west-southwest, the regional groundwater flow direction is most likely to the west-southwest towards the Pecos River.

Initial Release Response Activities

A release of approximately 8.6 bbls of oil mixed with a small quantity of produced water occurred at the site on January 1, 2012 due to a release from a high-density polyethylene gas line. Chevron personnel from the Mid-Continent Business Unit (MCBU) stopped the release and recovered an unknown quantity of fluids using a vacuum truck. Chevron MCBU personnel excavated visually impacted soil in the area to a depth of approximately 2 feet bgs and collected two discrete confirmation soil samples from the base of the excavation on May 7, 2012. Information regarding the disposal of the excavated soil was not available to ARCADIS. After collecting the soil samples, the excavated area was reportedly backfilled with imported soil.

Pursuant to New Mexico Oil Conservation Division (NMOCD) requirements (NMOCD 1993), a Notification of Release and Correction (Form C-141) detailing the location, volume of release, and initial and planned cleanup efforts taken was submitted for the site by David Pagano with Chevron MCBU. The original and updated C-141 forms are included as Attachment 4.

Confirmation Soil Sampling

Two discrete confirmation soil samples were collected from the base of the excavation on May 7, 2012. In accordance with the laboratory analytical report (Attachment 5), soil sample containers were transported, on ice, under chain of custody procedures to Cardinal Laboratories Environmental Analytical Services for the following analyses:

 Benzene, toluene, ethylbenzene, and xylene (BTEX) by United States Environmental Protection Agency (USEPA) Method 8021B



- Total petroleum hydrocarbons as gasoline range organics (TPH-GRO) and total petroleum hydrocarbons as diesel range organics (TPH-DRO) by USEPA Method 8015M
- Chloride by USEPA Method SM4500CI-B

Confirmation soil sample results are presented in Table 1. The complete laboratory analytical results with chain of custody documentation are included in Attachment 5.

Data Evaluation Approach

Chevron MCBU personnel compared data from the two May 2012 confirmation soil samples to regulatory criteria to provide context for the concentrations of analytes detected and to evaluate if additional sampling was necessary. The regulatory criteria selected are based on potential receptors near the site and consist of the following:

 NMOCD risk-based soil remediation action levels (SRALs) for benzene, total BTEX, and total petroleum hydrocarbons (TPH) for leaks, spills, and releases (NMOCD 1993). SRALs were calculated using the NMOCD criteria presented in the tables below.

Criteria	Site-Specific Result	Ranking Score
Depth to groundwater	>100 feet	0
Wellhead protection area	No	0
Distance to surface-water body	>1,000 feet	0
Tota	0	

SRALs	Benzene	Total BTEX	TPH
	(mg/kg)	(mg/kg)	(mg/kg)
	10	50	5,000

Note:

 New Mexico Administrative Code (NMAC) closure criteria for soil beneath belowgrade tanks, drying pads associated with closed-loop systems, and pits where contents are removed (NMAC 2009).

mg/kg = milligrams per kilogram

ARCADIS

Criteria	Site-Specific Result	Chloride (mg/kg)
Depth below bottom of pit to groundwater	>100 feet	1,000

Confirmation Soil Sample Results

The analytical results for BTEX, TPH-GRO, TPH-DRO, and chloride for the two discrete confirmation soil samples collected in May 2012 are provided in Table 1 and summarized below:

- Benzene and BTEX were not detected above the laboratory reporting limits (LRLs) or above the SRALs of 10 and 50 mg/kg, respectively.
- TPH-GRO was not detected above LRLs. TPH-DRO was detected in both confirmation samples at concentrations ranging from 3,070 mg/kg (SKU 936 Pad #1) to 3,280 mg/kg (SKU 936 Pad #2).
- TPH (TPH-DRO and TPH-GRO) was detected at 3,070 mg/kg (SKU 936 Pad #1) and 3,280 mg/kg (SKU 936 Pad #2). TPH was not detected above the SRAL of 5,000 mg/kg in the two discrete confirmation samples that were collected.
- Chloride was detected in both confirmation samples collected, at 9,730 mg/kg (SKU 936 Pad #2) and 16,000 mg/kg (SKU 936 Pad #1). Chloride was detected above the NMAC closure criterion of 500 mg/kg in both soil samples collected.

The complete laboratory analytical results with chain of custody documentation are included in Attachment 5.

Chloride concentrations in confirmation soil samples SKU 936 Pad #1 and SKU 936 Pad #2 were above the regulatory criteria, which prompted additional site assessment activities.

Site Assessment Activities

In November 2013, ARCADIS conducted site assessment activities to characterize the lateral and vertical extents of soil impacts at the site. Soil boring locations were selected based on the results of confirmation soil sampling completed at the site in May 2012, locations of pipelines and other equipment at the site, and the extent of



the release as documented by Chevron MCBU personnel during the initial response activities. The site assessment activities and results are discussed below.

Pre-Field Activities

Prior to initiating field activities, ARCADIS updated the site-specific Health and Safety Plan in accordance with state and federal requirements. Prior to initiating drilling activities, underground utilities and other potential subsurface obstructions near the proposed boring locations were located and marked. A New Mexico One Call ticket was issued for the site, and a private third-party utility locator cleared all proposed boring locations for potential on- and off-site utilities that were not otherwise identified. Finally, ARCADIS staff conducted a visual inspection of the site to identify potential utility lines. Boring locations were flagged during the utility locate and coordinates were recorded using a Trimble[®] global positioning unit with differential capability.

Soil Sampling

To evaluate the potential extent of impacts to soil at the site, ARCADIS advanced four soil borings (SKU936-01, SKU936-02, SKU936-03, and SKU936-04) on November 4 and 5, 2013. Soil sampling locations are shown on Figure 2.

Prior to conducting drilling activities, each boring location was cleared for subsurface utilities with an air knife. The air knife could not be advanced more than 2 to 3 inches bgs due to the presence of a thick caliche layer. Each soil boring was then advanced to a total depth of approximately 25 feet bgs using air rotary drilling equipment.

Soil was continuously logged for stratigraphic characteristics. The soil samples were field screened for the presence of volatile organic compounds using a photo ionization detector (PID) in combination with visual and olfactory screening methods for evidence of petroleum hydrocarbons. The PID used during this investigation was calibrated daily with fresh air and isobutylene gas. Field personnel recorded PID readings, soil types, and other pertinent geologic data on the boring logs (Attachment 6). No staining or elevated PID readings were observed.

Lithologic data indicate that the subsurface material primarily consists of a sandy clay layer over a thick sandy caliche (soil carbonate) layer, with a clayey sand layer beneath to approximately 25 feet bgs (Attachment 6).



Soil Assessment Sampling

Six soil samples were collected from each of the four boring locations (for a total of 24 soil samples) beginning at a depth of 2 feet bgs (the approximate depth of the soil excavation in the initial release response activities) and continuing at 5-foot intervals from 5 to 25 feet bgs.

The assessment soil samples were retained in clean, laboratory-supplied glass jars, labeled, placed in an ice-chilled cooler, and submitted under appropriate chain of custody protocols to TestAmerica Laboratories.

Soil Assessment Sample Analysis

Soil samples collected from each boring were analyzed for the following constituents:

- BTEX by USEPA Method 8021B
- TPH-GRO by USEPA Method 8015B
- TPH-DRO by USEPA Method 8015B
- Chloride by USEPA Method 9056
- Percent moisture by ASTM International Method D2216

Boring Abandonment

Following sampling, the boreholes were filled with soil cuttings from the total depth to ground surface. The ground surface was restored to match the surrounding conditions.

Soil Assessment Comparison Criteria

ARCADIS evaluated soil assessment analytical results for benzene, total BTEX, and TPH by comparing the data with the NMOCD SRALs (NMOCD 1993), as presented in the Data Evaluation Approach section of this report.

To develop an appropriate site-specific soil screening level (SSL) for chloride for use at the site, ARCADIS performed simulations of unsaturated zone flow, transport, and saturated zone mixing of chloride using the MULTIMED model Version 2.0 (USEPA 1996). The NMAC chloride standard for domestic water supply of 250 milligrams per liter (NMAC 2001) was used to estimate a maximum allowable concentration of chloride in soil that would not leach to groundwater above the standard. The NMAC chloride standard is consistent with the National Secondary Drinking Water Standard for chloride, addressing taste and odor concerns (USEPA 2010).



Conservative site-specific input parameters were used in the MULTIMED (USEPA 1996) simulations compared to actual site and release conditions. Specifically:

- Modeled source lengths and areas modeled are generally significantly larger than the actual chloride-impacted soil areas.
- Chloride-impacted soil was modeled as having a uniform chloride concentration for the entire volume (i.e., area x depth) of specified soil.
- A reduction in chloride concentrations in subsurface soil due to soil chemical transformation or adsorption mechanisms was not included in the model calculations.

Based on the depth to groundwater and the aerial and vertical extents of each of the MULTIMED (USEPA 1996) simulations, with these conservative site-specific input parameters, modeled peak chloride concentrations will reach groundwater in approximately 540 to 860 years.

The Chloride MULTIMED Simulated Soil Screening Levels for the Protection of Groundwater memo is included as Attachment 7. The site-specific SSL was calculated using the input parameters presented in the table below.

Site-Specific Input Pa	rameters
Source length (m)	20
Source area (m ²)	400
Source depth (m)	0 to 1
Depth to groundwater (m)	20
Chloride SSL (mg/kg)	100,000 ¹

A chloride SSL of 266,100 mg/kg was calculated using MUTLTIMED (USEPA 1996); however, a maximum allowable soil concentration of 100,000 mg/kg is recommended in accordance with the New Mexico Environment Department (NMED) risk assessment guidance (NMED 2012).

m = meter

 m^2 = square meter



Soil Assessment Sample Results

The analytical results for BTEX, TPH-GRO, TPH-DRO, chloride, and moisture for the 24 soil assessment samples are provided in Table 1 and summarized below:

- Benzene and ethylbenzene were not detected above LRLs in any of the 24 soil samples collected.
- Of the 24 soil assessment samples collected, toluene (0.038 mg/kg) and total xylenes (0.081 mg/kg) were detected above the LRLs in only one soil sample collected at 2 feet bgs at SKU936-03.
- TPH-GRO was detected in all soil samples at concentrations ranging from 1.6 mg/kg (SKU936-03 at 20 feet bgs) to 3.4 mg/kg (SKU936-02 at 2 feet bgs).
- TPH-DRO (12 mg/kg) was detected above the LRLs in only one soil sample collected at 5 feet bgs at SKU936-02.
- Chloride was detected in all soil samples at concentrations ranging from 7.7 mg/kg (SKU936-03 at 10 feet bgs) to 390 mg/kg (SKU936-04 at 2 feet bgs). Chloride concentrations were not detected above the site-specific SSL of 100,000 mg/kg.

Laboratory analytical results with chain of custody documentation are provided in Attachment 5.

Summary and Conclusions

A release of produced water and oil occurred at the site on January 1, 2012, due to a polyethylene gas line release. Visually impacted soil was excavated to a depth of approximately 2 feet bgs and two discrete confirmation soil samples were collected from the base of the excavation in May 2012. Both confirmation soil samples had and chloride concentrations above regulatory criteria, which prompted an additional investigation. In November 2013, additional soil samples were collected to assess soil impacts within the observed aerial extent of the release. None of the soil samples collected during the 2013 assessment exceeded the NMOCD SRALs. In addition, chloride concentrations were reported below the site-specific SSL using the MULTIMED model (USEPA 1996).

Although not all chloride concentrations were reported below the NMAC closure criterion of 250 mg/kg (Table 1; NMAC 2009), all chloride concentrations in samples collected during the 2013 assessment were below the site-specific SSL (Attachment



7). Chloride impacts in shallow soil potentially associated with the release were delineated.

Potential migration of remaining petroleum hydrocarbons or chloride to groundwater is not expected due to the small size of the release, low precipitation (WRCC 2014a), and high evapotranspiration rates (WRCC 2014b), and the fine-grained nature of caliche layers present beneath the site. MULTIMED model results demonstrate that the remaining soil concentrations associated with the release do not pose significant risk to groundwater resources or other receptors.

Soil data presented in this report support a conclusion that impacted soil associated with the reported release at the site poses no significant threat to groundwater resources or other receptors. ARCADIS recommends that CEMC submit a request to the NMOCD that no further investigations or additional cleanup actions need to be performed at the site and that the NMOCD grant No Further Action status to the site.

If you have any questions or comments regarding the information presented in this report, please contact Jonathan Olsen at 713.953.4874 or Jonathan.Olsen@arcadis-us.com, or Kathleen Abbott at 925.296.7827 or Kathleen.Abbott@arcadis-us.com.

Sincerely,

ARCADIS U.S., Inc.

Olyen

Jonathan Olsen Certified Project Manager

KAMALAO

Kathleen M. Abbott, PG Program Manager

Enclosures:

Table 1 Soil Sampling Analytical Results

Figure 1Site Location Map – SKU 936Figure 2Release and Soil Boring Locations – SKU 936

Attachments:

Attachment 1	Site Conceptual Model
Attachment 2	Photolog
Attachment 3	New Mexico Office of the State Engineer – Depth to Water
Attachment 4	Release Notification and Corrective Action (C-141 Form)



- Attachment 5 Laboratory Analytical Reports
- Attachment 6 Boring Logs (November 2013)
- Attachment 7 Chloride Multimedia Exposure Assessment Model Simulated Soil Screening Levels for the Protection of Groundwater Memo

References:

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- Western Regional Climate Center. 2014a. Artesia, New Mexico (290600) weather station. <u>http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?nmarte</u>. Viewed on June 2.
- Western Regional Climate Center. 2014b. Artesia, New Mexico, monthly average pan evaporation. <u>http://www.wrcc.dri.edu/htmlfiles/westevap.final.html#NEW MEXICO</u>. Viewed on May 6.



Table

Table 1 Soil Sampling Analytical Results

Site Assessment Report Skelly Unit 936 Lea County, New Mexico

Boring Location ID	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylben zene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	Chloride (mg/kg)	% Moisture
		SRALs ^(a)	10				50	5,0	000		
		NMAC Closure Criteria ^(b)								1,000	
	MUL	TIMED Site-Specific SSL ^(c)								100,000	
SKU 936 Pad #1	5/7/2012	0	<0.050	<0.050	<0.050	<0.15		<20.0	3,070	16,000	
SKU 936 Pad #2	5/7/2012	0	<0.050	<0.050	<0.050	<0.15		<10.0	3,280	9,730	
	11/4/2013	2	<0.025	<0.025	<0.025	<0.025	<0.025	3.3	<10	290	19
	11/4/2013	5	<0.020	<0.020	<0.020	<0.020	<0.020	2.5	<8.5	34	2
SKU936-01	11/4/2013	10	<0.020	<0.020	<0.020	<0.020	<0.020	2.5	<8.4	23	1
51(0350-01	11/4/2013	15	<0.020	<0.020	<0.020	<0.020	<0.020	2.7	<8.4	19	2
	11/4/2013	20	<0.020	<0.020	<0.020	<0.020	<0.020	2.6	<8.4	76	1
	11/4/2013	25	<0.021	<0.021	<0.021	<0.021	<0.021	2.9	<8.9	180	7
	11/4/2013	2	<0.020	<0.020	<0.020	<0.020	<0.020	3.4	<8.4	150	2
	11/4/2013	5	<0.020	<0.020	<0.020	<0.020	<0.020	2.9	12	23	1
SKU936-02	11/4/2013	10	<0.021	<0.021	<0.021	<0.021	<0.021	2.6	<8.5	22	3
0110330 02	11/4/2013	15	<0.020	<0.020	<0.020	<0.020	<0.020	2.3	<8.5	12	2
	11/4/2013	20	<0.021	<0.021	<0.021	<0.021	<0.021	2.4	<8.7	24	4
	11/4/2013	25	<0.021	<0.021	<0.021	<0.021	<0.021	2.0	<8.6	150	4
	11/4/2013	2	<0.021	0.038	<0.021	0.081	0.119	2.0	<8.9	28	7
	11/4/2013	5	<0.020	<0.020	<0.020	<0.020	<0.020	1.9	<8.4	21	2
SKU936-03	11/4/2013	10	<0.020	<0.020	<0.020	<0.020	<0.020	1.9	<8.5	7.7	2
010000000	11/4/2013	15	<0.020	<0.020	<0.020	<0.020	<0.020	1.7	<8.5	11	2
	11/4/2013	20	<0.021	<0.021	<0.021	<0.021	<0.021	1.6	<8.6	29	3
	11/4/2013	25	<0.021	<0.021	<0.021	<0.021	<0.021	2.0	<8.7	300	5
	11/5/2013	2	<0.020	<0.020	<0.020	<0.020	<0.020	2.2	<8.5	390	2
	11/5/2013	5	<0.020	<0.020	<0.020	<0.020	<0.020	2.5	<8.5	23	2
SKU936-04	11/5/2013	10	<0.021	<0.021	<0.021	<0.021	<0.021	2.6	<8.7	150	5
51(0350-04	11/5/2013	15	<0.021	<0.021	<0.021	<0.021	<0.021	2.7	<8.7	28	5
	11/5/2013	20	<0.021	<0.021	<0.021	<0.021	<0.021	1.8	<8.8	93	6
	11/5/2013	25	<0.020	<0.020	<0.020	<0.020	<0.020	1.9	<8.4	71	2

Notes:

%	Percent
mg/kg	Miligram(s) per kilogram
<	Analyte was not detected above the specified method reporting limit
*	Information regarding the depth of these samples is not available.
	Not Analyzed/Not Listed
bgs	Below ground surface
BTEX	Benzene, toluene, ethylbenzene, and total xylenes
MULTIMED	Multimedia Exposure Assessment Model
NMAC	New Mexico Administrative Code
TPH-GRO	Total Petroleum Hydrocarbons as Gasoline Range Organics
TPH-DRO	Total Petroleum Hydrocarbons as Diesel Range Organics



Figures





CITY: MANCHESTER DIV/GROUP: ENVCAD DB: B.SMALL PM: TM G\ENVCADManchester\ACT\B0048615\0000\00002\B00486150000\dwg LAYOUT: 10 SAVED: 1/7/2014 2:10 PM ACADVER: 18.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: ---- PLOTTED: 1/7/2014 2:10 PM BY: SMALL, BRIAN



Attachment 1

Ùãe^ÁÔ[}&^]过ÁT[å^|



The site is located in the western edge of the Permian Basin with Artesia (the closest town) located approximately 30 miles northwest of the site. Due to the arid climate, the site experiences low precipitation and high evapotranspiration rates. According to information obtained from the NMOSE online database, groundwater near the site is encountered at a depth of approximately 263 feet bgs.



NOT TO SCALE SITE ASSESSMENT

A release of approximately 8.6 bbls of oil mixed with a small quantity of produced water occurred at the site on January 1, 2012 due to a release from a high-density polyethylene gas line. Chevron personnel from the Mid-Continent Business Unit (MCBU) stopped the release and recovered an unknown quantity of fluids using a vacuum truck. Chevron MCBU personnel excavated visually impacted soil in the area to a depth of approximately 2 feet bgs and collected two discrete confirmation soil samples from the base of the excavation on May 7, 2012. After collecting the soil sample, the excavated area was reportedly backfilled with imported soil. Analyte concentrations in one or more confirmation soil samples were above regulatory criteria, deeming additional site assessment activities necessary.

In November 2013, ARCADIS conducted site assessment activities to characterize the lateral and vertical extents of soil impacts at the site. Soil boring locations were selected based on the results of confirmation soil sampling completed at the site in May 2012, locations of pipelines and other equipment at the site, and the extent of the release as documented by Chevron MCBU personnel during the initial response activities. Analyte concentrations in samples collected during the 2013 assessment were reported below site-specific criteria. Site assessment activities demonstrate that remaining soil concentrations associated with the release do not pose significant risk to groundwater resources or other receptors.



VACUUM/LOVINGTON FUNCTIONAL MANAGEMENT TEAM UNITS EDDY COUNTY, NEW MEXICO SITE ASSESSMENT REPORT

> Site Conceptual Model SKU 936



FIGURE



Attachment 2

Photolog

ARCADIS

Skelly Unit #936 Site Assessment Report Photolog Lea County, New Mexico



Photograph 1 – Skelly Unit #936 release area; Facing Southwest



Photograph 2 – Skelly Unit #936 release area; Facing South



Attachment 3

New Mexico Office of the State Engineer – Depth to Water



New Mexico Office of the State Engineer Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a	been r	DD has replaced, haned, file is		(quai	ters	are 1	=NW	2=NE 3=	SW 4=SE)				
water right file.)	closed	4)		••				st to large		AD83 UTM in me	eters)	(In feet)	
	Cada	POD Sub-			QQ			Dee	х	Y	Distance			Water Column
POD Number RA 10175	Code	basin C	LE	y 04	2 1			32E	^ 614814	3631005* 🌍	Distance 10164	158	water	Column
RA 12020 POD1			LE	2	2 ~	28	17S	32E	614828	3630954 🌍	10185	120	81	39
RA 12042 POD1			LE	2	2 ~	28	17S	32E	614891	3631181 🌍	10214	400		
L 10206		L	LE		2 2	2 23	16S	31E	609045	3642204* 🌍	10515	280		
L 10203		L	LE	4	4 3	3 14	16S	31E	608334	3642495* 🌍	10520	310		
CP 00672			LE		4 4	↓ 07	18S	32E	612475	3624947* 🌍	10852	524	430	94
CP 00672 CLW475398	0		LE		4 4	ŧ 07	18S	32E	612475	3624947* 🌍	10852	540	460	80
L 03852 POD4		L	LE	3	4 3	3 13	16S	31E	609744	3642516* 🌍	11096	333	299	34
CP 00566			LE	4	4 <i>~</i>	04	18S	32E	614960	3627280* 🌍	11488	133	65	68
L 03852 X	R	L	LE	4	4 4	13	16S	31E	610749	3642526* 🌍	11589	333	299	34
RA 08855			LE	4	1 -	10	17S	32E	616061	3635742* 🌍	11716	158		
L 03852	R	L	LE	2	2 2	2 14	16S	31E	609126	3643913* 🌍	12126	370	314	50
RA 09505			LE	2	2 ′	10	17S	32E	616462	3635944 🌍	12157	147		
L 13050 POD1		L	LE	2	2 ′	10	17S	32E	616463	3635945* 🌍	12158	156	132	24
RA 09505 S			LE	2	2 ´	10	17S	32E	616463	3635945* 🌍	12158	144		
L 03852 POD5	R	L	LE	2	3 2	2 13	16S	31E	610387	3643470 🌍	12238	328	295	33
RA 11734 POD1			LE	2	2 ~	10	17S	32E	616556	3635929 🌍	12243	165		
										Avera	ge Depth to Minimum			feet feet
											Maximum	Depth:	460	feet
Record Count: 17														
Basin/County Search	<u>h:</u>													
UTMNAD83 Radius S	Search (i	in meter	rs):											
Easting (X): 6047			-	No			26	32594.31		Padiua	: 12500			

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.



Attachment 4

Release Notification and Corrective Action (C-141 Form)

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification	and	Corrective	Action
----------------------	-----	------------	--------

	OPERATOR	Х	Initial Report	Final Report			
Name of Company CHEVRON	Contact David Pagano						
Address	Telephone No. Office: 575-396-4414 ext 275 Cellular: 505-787-9816						
56 Texas Camp Road, Lovington NM 88260							
Facility Name: Skelly Unit 936	Facility Type: Producing Well						

Surface Owner: Federal

Lease No. NM-98122

LOCATION OF RELEASE-API # 30-015-32595

Mineral Owner

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County Eddy
D	21	17.0S	31E					

NATURE OF RELEASE

Type of Release Crude Oil and produced Water Spill	Volume of Release 8.6bbls fluid	Volume Recovered
Source of Release : Flow Line	Date and Hour of Occurrence	Date and Hour of Discovery
	01/24/12 10:45	01/24/12 11:00
Was Immediate Notice Given?	If YES, To Whom? Mr. Leking via	voicemail
🛛 Yes 🗌 No 🗌 Not Required		
By Whom? David Pagano		
Was a Watercourse Reached?	If YES, Volume Impacting the Wat	ercourse.
🗌 Yes 🖾 No		
If a Watercourse was Impacted, Describe Fully.*		

Describe Cause of Problem and Remedial Action Taken.*

It appears someone drove around wellhead and snagged out poly gas line, causing 8.6bbl fluid spill, mostly oil with a small amount of produced water. Chemical rep notified pumper of spill to land at 10:45 and pumper immediately drove to well and shut well in to contain release. Well shut in at approx 11:00AM.

Describe Area Affected and Cleanup Action Taken.*

Approx 8.6bbls of fluid mostly oil spilled on pad and worked its way to the road as well as foot wide path that ran into the pasture. Vacuum truck vacuumed up standing liquid on pad and road. Chevron has received Archeological/wildlife clearance from BLM. Backhoe will excavate contaminated soil on pad and road and contaminated soil will be taken offsite for disposal. Spray off of pad into the pasture will be remediated by knocking off fluids from vegetation using biodegradable soap and then we are looking at using micro blaze to remediated contaminated soil. Surface sample will be taken tomorrow to determine level of chlorides in order to evaluate potential effectiveness of micro blaze for pasture/off pad remediation.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/op/regulations.

Signature: Dawith	OIL	CONSERVATION DIVISION
Printed Name: David Pagano	Approved by District Supe	ervisor:
Title: Health & Environmental Specialist	Approval Date:	Expiration Date:
Date: 01/25/12 Phone: 505-787-9816	Conditions of Approval:	Attached 🗌

* Attach Additional Sheets If Necessary

State of New Mexico Energy Minerals and Natural Resources

> Oil Conservation Division 1220 South St. Francis Dr. Santa Fe. NM 87505

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

1220 S. St. Fran	cis Dr., Santa	a Fe, NM 8750	5			ii St. Flanc Se, NM 875							
			Rele	ease Notific				e Ac	tion				
						OPERA					al Report	\boxtimes	Final Report
Name of Co	ompany: C	HEVRON U	.S.A. Inc	2		Contact: Ed				Long Alling			T mar report
		mp Road, Lo	ovington	NM 88260		Telephone No.: Office: (575) 396-4414 Mobile: (432) 234-4437							
Facility Nar	ne: Skelly	Unit 936				Facility Typ	e: Productio	on We	ell				
Surface Ow	ner: Feder	al		Mineral C)wner:	State of Nev	Mexico	API	No. 3	0-015-32	595 / Lease	No.	NM-98122
						N OF REI							
Unit Letter	Section	Township	Range	Feet from the		/South Line	Feet from t	he	East/W	Vest Line	County		
D		17.00											
D	21	17.0S	31E								Eddy		
				Latitude		Longitud	e						
					URE	OF REL	EASE						
		Oil and produ	ced Water	Spill			Release: 8.6 b		uid		Recovered: l		
Source of Re	lease: Flow	Line					our of Occurr	ence:	ĺ		Hour of Dis	covery	:
Was Immedia	ate Notice C	Given?				01/24/12 10 If YES, To Y				01/24/12	11:00 AM	-	
			es 🗌 1	No 🔲 Not Requ	uired		via voicemai	1					
By Whom? I						Date and Ho	our:						
Was a Water	course Read					If YES, Vol	ume Impactii	ng the	Water	course.			
			Yes 🛛 I										
If a Watercou N/A	irse was Im	pacted, Descr	ibe Fully.	*		· · · · ·							
Describe Cau	se of Proble	em and Reme	dial Actio	n Taken.*									
Chemical rep approximatel	notified pu y 11:00 AN	mper of spill	to land at	snagged out poly p 10:45 and pumpe	gas line r imme	, causing 8.6 b diately drove t	bls fluid spil o well and sh	ll, mos 1ut wel	tly oil ll in to	with a sma contain re	Il amount of lease. Well s	f produ shut in	ced water. at
Approx. 8.6 t vacuumed up and road and	bbls of fluid standing lie contaminat	quid on pad a ed soil was ta	illed on pa nd road. C ken offsite	ken.* ad and worked its Chevron received A e for disposal. Spr plaze to remediate	Archeol ay off o	logical/wildlife	e clearance fr	om BI	LM. Ba	ackhoe exc	avated conta	aminate	ed soil on pad
Two discrete soils. These s	soil confirm ampling res	nation sample sults indicated	s were col the prese	llected from the bandle of chloride co	ase of t	he excavation ations in shallo	before the ex w soils at lev	cavate vels of	ed area regula	was repor tory conce	tedly backfil rn.	lled wit	h imported
In response to	these result	lts, an additio	nal site as:	sessment was con	ducted	to confirm the	extent of soi	il impa	icts.				
Analytical re-	sults of the	additional ass	ecoment o	re attached									
I hereby certi regulations al public health should their c or the environ	fy that the i l operators or the envir operations h nment. In a	nformation gi are required to ronment. The ave failed to a	ven above o report ar acceptanc idequately OCD accep	e is true and comp nd/or file certain r ce of a C-141 repo v investigate and r otance of a C-141	elease r ort by th emedia	notifications an ne NMOCD m te contaminati	nd perform co arked as "Fin on that pose a	orrecti al Rep a threa	ve acti port" de it to gre	ons for rele oes not reli ound water	eases which ieve the oper r, surface wa	may er rator of iter, hu	ndanger Tliability man health
	•	Λ	\sim	0 I			OIL CO	ONS	ERV	ATION	DIVISIC	<u>)N</u>	
Signature:	Lu	ke l	Det	le									
Printed Name	: Luke Wel	ch		<u> </u>		Approved by	Environmen	tal Spe	ecialist	•			
Title: Project	Manager					Approval Dat	e:		E	Expiration	Date:		
E-mail Addre	ss: LWelcl	h@chevron.co	m			Conditions of	Approval:				Attached		
Date: B/I Attach Addit	z/14 tional Shee	ets If Necess		: (713) 372-0292									



Attachment 5

Laboratory Analytical Reports



Analytical Results For:

		Chevron - DAVID PA HCR 60 Bo Lovington	GANO		
		Fax To:	None		
Received:	05/07/2012			Sampling Date:	05/07/2012
Reported:	05/15/2012			Sampling Type:	Soil
Project Name:	SOIL SAMPLES			Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN			Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN				

Sample ID: SKU 936 PAD #2 (H201036-05)

BTEX 8021B	mg/	′kg	Analyze	d By: ZZZ					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/11/2012	ND	1.98	98.9	2.00	1.92	
Toluene*	<0.050	0.050	05/11/2012	ND	2.17	108	2.00	4.50	
Ethylbenzene*	<0.050	0.050	05/11/2012	ND	2.19	110	2.00	5.41	
Total Xylenes*	<0.150	0.150	05/11/2012	ND	6.98	116	6.00	7.19	
Surrogate: 4-Bromofluorobenzene (PID	109 9	% 64.4-13	4						
Chloride, SM4500Cl-B	mg/	′kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	9730	16.0	05/09/2012	ND	400	100	400	0.00	
TPH 8015M	mg/	′kg	Analyze	d By: MS					S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	05/10/2012	ND	189	94.3	200	2.57	
DRO >C10-C28	3280	10.0	05/10/2012	ND	180	90.2	200	1.12	
Surrogate: 1-Chlorooctane	86.4	% 55.5-15	4						
Surrogate: 1-Chlorooctadecane	167 9	57.6-15	8						

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatscever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims based upon any of the above stated reasons or otherwise. Results relate only to the sample identified above. This report shall not be reprodued except in full with written approval of Cardinal toratories.

Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager



Analytical Results For:

		Chevron - DAVID PA HCR 60 Bo Lovington	GANO		
		Fax To:	None		
Received:	05/07/2012			Sampling Date:	05/07/2012
Reported:	05/15/2012			Sampling Type:	Soil
Project Name:	SOIL SAMPLES			Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN			Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN				

Sample ID: SKU 936 PAD #1 (H201036-06)

BTEX 8021B	mg/	kg	Analyze	d By: ZZZ					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/11/2012	ND	1.98	98.9	2.00	1.92	
Toluene*	<0.050	0.050	05/11/2012	ND	2.17	108	2.00	4.50	
Ethylbenzene*	<0.050	0.050	05/11/2012	ND	2.19	110	2.00	5.41	
Total Xylenes*	<0.150	0.150	05/11/2012	ND	6.98	116	6.00	7.19	
Surrogate: 4-Bromofluorobenzene (PID	108 9	64.4-13	4						
Chloride, SM4500Cl-B	mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16000	16.0	05/09/2012	ND	400	100	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: MS					S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<20.0	20.0	05/10/2012	ND	189	94.3	200	2.57	
DRO >C10-C28	3070	20.0	05/10/2012	ND	180	90.2	200	1.12	
Surrogate: 1-Chlorooctane	86.3	% 55.5-15	4						
Surrogate: 1-Chlorooctadecane	162 9	57.6-15	8						

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager



THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Houston 6310 Rothway Street Houston, TX 77040 Tel: (713)690-4444

TestAmerica Job ID: 600-82260-1 Client Project/Site: HES Transfer Sites, Lea County NM

For: ARCADIS U.S., Inc. 2929 Briarpark Drive Suite 300 Houston, Texas 77042

Attn: Mr. Jonathan Olsen

& Kudchadker

Authorized for release by: 11/22/2013 5:01:35 PM

Sachin Kudchadkar, Senior Project Manager (713)690-4444 sachin.kudchadkar@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Job ID: 600-82260-1

Laboratory: TestAmerica Houston

Narrative

Job Narrative 600-82260-1

Comments

No additional comments.

Receipt

The samples were received on 11/7/2013 7:01 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 5 coolers at receipt time were 1.6° C, 1.7° C, 3.0° C, 3.0° C and 3.7° C.

GC/MS VOA

No analytical or quality issues were noted.

GC VOA

Method(s) 8021B: Surrogate recovery for the following sample(s) was outside the upper control limit: SKU936-03-25 (600-82260-29). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

No other analytical or quality issues were noted.

GC Semi VOA

Method(s) 8015B: Surrogate recovery for the following sample(s) was outside control limits: SKU936-02-05 (600-82260-41). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

No other analytical or quality issues were noted.

General Chemistry

Method(s) 9056: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 120752 were outside control limits for Chloride. The associated laboratory control sample (LCS) recovery met acceptance criteria.

Method(s) 9056: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 120842 were outside control limits for Chloride. The associated laboratory control sample (LCS) recovery met acceptance criteria.

Method(s) 9056: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 120842 were outside control limits for Chloride. The associated laboratory control sample (LCS) recovery met acceptance criteria.

No other analytical or quality issues were noted.

Organic Prep

No analytical or quality issues were noted.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Client: ARCADIS U.S., Inc. Project/Site: HES Transfer Sites, Lea County NM

Method Description

Percent Moisture

EPA = US Environmental Protection Agency

Gasoline Range Organics - (GC)

Volatile Organic Compounds (GC)

Anions, Ion Chromatography

Diesel Range Organics (DRO) (GC)

Method

8015B

8021B 8015B

9056

Moisture

Protocol References:

Laboratory References:

Protocol SW846

SW846

SW846

SW846

EPA

Laboratory

TAL HOU

TAL HOU

TAL HOU

TAL HOU

TAL HOU

4	
5	
8	
9	

TestAmerica Houston

Client: ARCADIS U.S., Inc. Project/Site: HES Transfer Sites, Lea County NM

TestAmerica Job ID: 600-82260-1

5
8
9

ab Sample ID.	Client Sample ID	Matrix	Collected	Received
00-82260-12	SKU936-04-20	Solid	11/05/13 09:58	11/07/13 07:0
00-82260-13	SKU936-04-25	Solid	11/05/13 10:00	11/07/13 07:0
600-82260-23	SKU936-02-25	Solid	11/04/13 11:56	11/07/13 07:0
600-82260-24	SKU936-03-02	Solid	11/04/13 12:40	11/07/13 07:0
00-82260-25	SKU936-03-05	Solid	11/04/13 12:42	11/07/13 07:0
00-82260-26	SKU936-03-10	Solid	11/04/13 12:44	11/07/13 07:0
00-82260-27	SKU936-03-15	Solid	11/04/13 12:46	11/07/13 07:0
00-82260-28	SKU936-03-20	Solid	11/04/13 12:48	11/07/13 07:0
00-82260-29	SKU936-03-25	Solid	11/04/13 12:50	11/07/13 07:0
00-82260-30	SKU936-04-02	Solid	11/05/13 09:50	11/07/13 07:0
00-82260-31	SKU936-04-05	Solid	11/05/13 09:52	11/07/13 07:0
00-82260-32	SKU936-04-10	Solid	11/05/13 09:54	11/07/13 07:0
00-82260-33	SKU936-04-15	Solid	11/05/13 09:56	11/07/13 07:
00-82260-34	SKU936-01-02	Solid	11/04/13 13:57	11/07/13 07:0
00-82260-35	SKU936-01-05	Solid	11/04/13 14:00	11/07/13 07:0
00-82260-36	SKU936-01-10	Solid	11/04/13 14:02	11/07/13 07:0
00-82260-37	SKU936-01-15	Solid	11/04/13 14:04	11/07/13 07:0
00-82260-38	SKU936-01-20	Solid	11/04/13 14:06	11/07/13 07:0
00-82260-39	SKU936-01-25	Solid	11/04/13 14:08	11/07/13 07:0
00-82260-40	SKU936-02-02	Solid	11/04/13 11:46	11/07/13 07:0
00-82260-41	SKU936-02-05	Solid	11/04/13 11:48	11/07/13 07:0
00-82260-42	SKU936-02-10	Solid	11/04/13 11:50	11/07/13 07:0
00-82260-43	SKU936-02-15	Solid	11/04/13 11:52	11/07/13 07:0
00-82260-44	SKU936-02-20	Solid	11/04/13 11:54	11/07/13 07:0
Ethylbenzene

Client Sample ID: SKU936-	04-20						Lab Samp	le ID: 600-82	260-12
Date Collected: 11/05/13 09:58								Matri	x: Solid
ate Received: 11/07/13 07:01								Percent Soli	ds: 94.2
Method: 8015B - Gasoline Rang	ne Organics - (G	C)							
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
WI Gasoline Range Organics	1.8		1.1		mg/Kg		11/08/13 12:17	11/11/13 23:45	1
(C6-C10)									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
a,a,a-Trifluorotoluene	104		50 - 150				11/08/13 12:17	11/11/13 23:45	
4-Bromofluorobenzene	93		50 - 150				11/08/13 12:17	11/11/13 23:45	
Method: 8021B - Volatile Organ	nic Compounds ((GC)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	ND		0.021		mg/Kg	<u></u>	11/07/13 10:36	11/15/13 13:54	
Toluene	ND		0.021		mg/Kg	☆	11/07/13 10:36	11/15/13 13:54	
Ethylbenzene	ND		0.021		mg/Kg	¢	11/07/13 10:36	11/15/13 13:54	
Xylenes, Total	ND		0.021		mg/Kg	¢	11/07/13 10:36	11/15/13 13:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene	90		43 - 141				11/07/13 10:36	11/15/13 13:54	
a,a,a-Trifluorotoluene	93		44 - 134				11/07/13 10:36	11/15/13 13:54	-
Method: 8015B - Diesel Range	Organics (DRO)	(GC)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Diesel Range Organics [C10-C28]	ND		8.8		mg/Kg	<u> </u>	11/11/13 09:58	11/13/13 04:46	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
o-Terphenyl	70		60 - 140				11/11/13 09:58	11/13/13 04:46	1
General Chemistry									
Analyte		Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fa
Percent Moisture	5.8		1.0		%			11/08/13 14:11	
Percent Solids	94		1.0		%			11/08/13 14:11	
General Chemistry - Soluble									
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Chloride	93		4.2		mg/Kg			11/18/13 23:00	
lient Sample ID: SKU936-	04-25						Lab Samp	le ID: 600-82	260-13
ate Collected: 11/05/13 10:00								Matri	x: Solic
ate Received: 11/07/13 07:01								Percent Soli	ds: 98.1
Method: 8015B - Gasoline Rang	ge Organics - (G	C)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
WI Gasoline Range Organics (C6-C10)	1.9		1.0		mg/Kg	\$	11/08/13 12:17	11/12/13 00:11	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
a,a,a-Trifluorotoluene	104		50 - 150				11/08/13 12:17	11/12/13 00:11	
4-Bromofluorobenzene	93		50 - 150				11/08/13 12:17	11/12/13 00:11	
Method: 8021B - Volatile Organ	nic Compounds ((GC)							
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	ND		0.020		mg/Kg		11/07/13 10:36	11/15/13 14:16	
Toluene	ND		0.020		mg/Kg	¢	11/07/13 10:36	11/15/13 14:16	
			0.000		5 5				

TestAmerica Houston

11/15/13 14:16

₽

mg/Kg

11/07/13 10:36

0.020

ND

1

RL

0.020

Limits

43 - 141

44 - 134

MDL Unit

mg/Kg

D

☆

Prepared

11/07/13 10:36

Prepared

11/07/13 10:36

11/07/13 10:36

Client: ARCADIS U.S., Inc. Project/Site: HES Transfer Sites, Lea County NM

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Result Qualifier

Qualifier

ND

85

80

%Recovery

Client Sample ID: SKU936-04-25

Date Collected: 11/05/13 10:00

Date Received: 11/07/13 07:01

Analyte

Xylenes, Total

4-Bromofluorobenzene

a,a,a-Trifluorotoluene

Surrogate

TestAmerica Job ID: 600-82260-1

Lab Sample ID: 600-82260-13

Analyzed

11/15/13 14:16

Analyzed

11/15/13 14:16

11/15/13 14:16

Matrix: Solid

Dil Fac

Dil Fac

1

1

1

Percent Solids: 98.1

6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		8.4		mg/Kg	 	11/11/13 09:58	11/13/13 05:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	67		60 - 140				11/11/13 09:58	11/13/13 05:51	1
General Chemistry									
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	1.9		1.0		%			11/08/13 14:11	1
Percent Solids	98		1.0		%			11/08/13 14:11	1
General Chemistry - Soluble									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	71		4.1		mg/Kg	\ ↓		11/18/13 23:16	1
ate Collected: 11/04/13 11:56	2-25						Lab Samp	le ID: 600-82 Matri Percent Soli	x: Solid
ate Collected: 11/04/13 11:56 ate Received: 11/07/13 07:01		C)					Lab Samp	Matri	x: Solid
ate Collected: 11/04/13 11:56 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Rang	e Organics - (G	C) Qualifier	RL	MDL	Unit	D	Prepared	Matri	x: Solid ds: 96.2
ate Collected: 11/04/13 11:56 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte WI Gasoline Range Organics	e Organics - (G		RL 1.0	MDL	Unit mg/Kg	D		Matri Percent Soli	x: Solid ds: 96.2 Dil Fac
ate Collected: 11/04/13 11:56 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte WI Gasoline Range Organics (C6-C10)	e Organics - (G Result	Qualifier		MDL			Prepared	Matri Percent Soli Analyzed	x: Solid ds: 96.2 Dil Fac
Client Sample ID: SKU936-0 ate Collected: 11/04/13 11:56 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte WI Gasoline Range Organics (C6-C10) Surrogate a,a,a-Trifluorotoluene	e Organics - (G Result 2.0	Qualifier	1.0	MDL			Prepared 11/08/13 12:17	Matri Percent Soli Analyzed 11/12/13 00:36	x: Solid ds: 96.2 Dil Fac
ate Collected: 11/04/13 11:56 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte WI Gasoline Range Organics (C6-C10) Surrogate a,a,a-Trifluorotoluene	e Organics - (G Result 2.0 %Recovery	Qualifier	1.0	MDL			Prepared 11/08/13 12:17 Prepared	Matri Percent Soli Analyzed 11/12/13 00:36 Analyzed	x: Solid ds: 96.2 Dil Fac 1 Dil Fac
ate Collected: 11/04/13 11:56 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte WI Gasoline Range Organics (C6-C10) Surrogate	e Organics - (G Result 2.0 %Recovery 104 94	Qualifier Qualifier	1.0 Limits 50 - 150	MDL			Prepared 11/08/13 12:17 Prepared 11/08/13 12:17	Matri Percent Soli Analyzed 11/12/13 00:36 Analyzed 11/12/13 00:36	x: Solid ds: 96.2 Dil Fac Dil Fac
ate Collected: 11/04/13 11:56 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte WI Gasoline Range Organics (C6-C10) Surrogate a,a,a-Trifluorotoluene 4-Bromofluorobenzene Method: 8021B - Volatile Organi	e Organics - (G Result 2.0 %Recovery 104 94 c Compounds	Qualifier Qualifier	1.0 Limits 50 - 150	MDL	mg/Kg		Prepared 11/08/13 12:17 Prepared 11/08/13 12:17	Matri Percent Soli Analyzed 11/12/13 00:36 Analyzed 11/12/13 00:36	x: Solid ds: 96.2 Dil Fac 1 Dil Fac
ate Collected: 11/04/13 11:56 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte WI Gasoline Range Organics (C6-C10) Surrogate a,a,a-Trifluorotoluene 4-Bromofluorobenzene	e Organics - (G Result 2.0 %Recovery 104 94 c Compounds	Qualifier Qualifier	1.0 Limits 50 - 150 50 - 150		mg/Kg	<u>×</u>	Prepared 11/08/13 12:17 Prepared 11/08/13 12:17 11/08/13 12:17	Matri Percent Soli 11/12/13 00:36 Analyzed 11/12/13 00:36 11/12/13 00:36	x: Solid
ate Collected: 11/04/13 11:56 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte WI Gasoline Range Organics (C6-C10) Surrogate a,a,a-Trifluorotoluene 4-Bromofluorobenzene Method: 8021B - Volatile Organi Analyte	e Organics - (G Result 2.0 %Recovery 104 94 c Compounds Result	Qualifier Qualifier	1.0 Limits 50 - 150 50 - 150 RL		mg/Kg	‡	Prepared 11/08/13 12:17 Prepared 11/08/13 12:17 11/08/13 12:17 Prepared	Matri Percent Soli Analyzed 11/12/13 00:36 11/12/13 00:36 11/12/13 00:36 Analyzed	x: Solid ds: 96.2 Dil Fac Dil Fac Dil Fac

Xylenes, Total	ND	0.021	mg/Kg	¢	11/07/13 10:36	11/15/13 14:38	1
Surrogate	%Recovery Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	57	43 _ 141			11/07/13 10:36	11/15/13 14:38	1
a,a,a-Trifluorotoluene	54	44 - 134			11/07/13 10:36	11/15/13 14:38	1
Method: 8015B - Diesel Range Or	• • • • •	51		_	- ·		D 11 E
Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND	8.6	mg/Kg	¢	11/11/13 10:58	11/13/13 06:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	71		60 - 140	11/11/13 10:58	11/13/13 06:55	1

Client: ARCADIS U.S., Inc. Project/Site: HES Transfer Sites, Lea County NM TestAmerica Job ID: 600-82260-1

lient Sample ID: SKU936-0	2-25						Lab Samp	le ID: 600-82	260-2
ate Collected: 11/04/13 11:56								Matri	ix: Soli
ate Received: 11/07/13 07:01									
General Chemistry									
Analyte		Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fa
Percent Moisture	3.8		1.0		%			11/07/13 13:58	
Percent Solids	96		1.0		%			11/07/13 13:58	
General Chemistry - Soluble									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Chloride	150		4.2		mg/Kg	<u></u>		11/16/13 21:40	
lient Sample ID: SKU936-0	3-02						Lab Samp	le ID: 600-82	260-2
ate Collected: 11/04/13 12:40	0 02						Lus Cump		ix: Soli
ate Received: 11/07/13 07:01								Percent Soli	
Mathadi 2015D Casalina Dana	o Ormaniaa (C	0)							
Method: 8015B - Gasoline Range Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil F
WI Gasoline Range Organics	2.0		1.1		mg/Kg	<u> </u>	11/08/13 12:17	11/12/13 01:01	
C6-C10)									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil F
,a,a-Trifluorotoluene			50 - 150				11/08/13 12:17	11/12/13 01:01	
-Bromofluorobenzene	94		50 - 150				11/08/13 12:17	11/12/13 01:01	
Method: 8021B - Volatile Organi						_			
Analyte		Qualifier		MDL		— <u>D</u>	Prepared	Analyzed	Dil F
Benzene	ND		0.021		mg/Kg		11/07/13 10:36	11/15/13 14:59	
Foluene	0.038		0.021		mg/Kg	¢ ¢	11/07/13 10:36	11/15/13 14:59	
Ethylbenzene	ND		0.021		mg/Kg		11/07/13 10:36	11/15/13 14:59	
Kylenes, Total	0.081		0.021		mg/Kg	¢	11/07/13 10:36	11/15/13 14:59	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil F
l-Bromofluorobenzene	91		43 - 141				11/07/13 10:36	11/15/13 14:59	
a,a,a-Trifluorotoluene	67		44 - 134				11/07/13 10:36	11/15/13 14:59	
Method: 8015B - Diesel Range O	rganics (DRO)	(6C)							
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil F
Diesel Range Organics [C10-C28]	ND		8.9		mg/Kg	\ ₽	11/11/13 10:58	11/13/13 07:27	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil F
p-Terphenyl			60 - 140				11/11/13 10:58	11/13/13 07:27	
General Chemistry	Deerit	Qualifier	D 1		Unit	~	Dropered	Anolyzed	D 11 C
Analyte		Qualifier	RL 1.0	ĸL	Unit %	D	Prepared	Analyzed 11/07/13 13:58	Dil F
Percent Moisture Percent Solids	6.9 93		1.0		%			11/07/13 13:58	
ercent Johus									
General Chemistry - Soluble		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil F

Client Sample ID: SKU936-03-05

Date Collected: 11/04/13 12:42

Date Received: 11/07/13 07:01

TestAmerica Job ID: 600-82260-1

 Lab Sample ID: 600-82260-25
 3

 Matrix: Solid
 4

 Prepared
 Analyzed
 Dil Fac

 11/08/3 12:17
 11/12/13 01:26
 1

6

	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
WI Gasoline Range Organics (C6-C10)	1.9		1.0		mg/Kg	<u></u>	11/08/13 12:17	11/12/13 01:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	104		50 - 150				11/08/13 12:17	11/12/13 01:26	1
4-Bromofluorobenzene	94		50 - 150				11/08/13 12:17	11/12/13 01:26	-
Method: 8021B - Volatile Organ									
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	ND		0.020		mg/Kg	₩	11/07/13 10:36	11/15/13 15:21	
Toluene	ND		0.020		mg/Kg	₽	11/07/13 10:36	11/15/13 15:21	
Ethylbenzene	ND		0.020		mg/Kg	¢	11/07/13 10:36	11/15/13 15:21	
Xylenes, Total	ND		0.020		mg/Kg	₽	11/07/13 10:36	11/15/13 15:21	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene	58		43 - 141				11/07/13 10:36	11/15/13 15:21	
4-Bromofluorobenzene	100		43 - 141				11/07/13 10:36	11/15/13 23:15	
a,a,a-Trifluorotoluene	47		44 - 134				11/07/13 10:36	11/15/13 15:21	
a,a,a-Trifluorotoluene	70		44 _ 134				11/07/13 10:36	11/15/13 23:15	
Method: 8015B - Diesel Range (Organics (DRO)	(GC)							
Method: 8015B - Diesel Range (Analyte	Result	(GC) Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
-			RL	MDL	Unit mg/Kg	D	Prepared 11/12/13 10:22	Analyzed 11/13/13 13:22	Dil Fa
Analyte	Result	Qualifier		MDL			· · · · · · · · · · · · · · · · · · ·		
Analyte Diesel Range Organics [C10-C28]	Result ND	Qualifier	8.4	MDL			11/12/13 10:22	11/13/13 13:22	Dil Fa
Analyte Diesel Range Organics [C10-C28] Surrogate	Result ND %Recovery	Qualifier	8.4 Limits	MDL			11/12/13 10:22 Prepared	11/13/13 13:22 Analyzed	Dil Fac
Analyte Diesel Range Organics [C10-C28] Surrogate o-Terphenyl	Result ND %Recovery 64	Qualifier	8.4 Limits 60 - 140	MDL			11/12/13 10:22 Prepared 11/12/13 10:22	11/13/13 13:22 Analyzed 11/13/13 13:22	Dil Fa
Analyte Diesel Range Organics [C10-C28] Surrogate o-Terphenyl o-Terphenyl	Result ND %Recovery 64 74	Qualifier	8.4 Limits 60 - 140 60 - 140 RL		mg/Kg Unit		11/12/13 10:22 Prepared 11/12/13 10:22	11/13/13 13:22 Analyzed 11/13/13 13:22 11/13/13 13:22 Analyzed	Dil Fa
Analyte Diesel Range Organics [C10-C28] Surrogate o-Terphenyl o-Terphenyl General Chemistry	Result ND %Recovery 64 74	Qualifier Qualifier	8.4 Limits 60 - 140 60 - 140		mg/Kg	<u>*</u>	11/12/13 10:22 Prepared 11/12/13 10:22 11/12/13 10:22	11/13/13 13:22 Analyzed 11/13/13 13:22 11/13/13 13:22 11/13/13 13:22	Dil Fa
Analyte Diesel Range Organics [C10-C28] Surrogate o-Terphenyl o-Terphenyl General Chemistry Analyte	Result Result Result	Qualifier Qualifier	8.4 Limits 60 - 140 60 - 140 RL		mg/Kg Unit	<u>*</u>	11/12/13 10:22 Prepared 11/12/13 10:22 11/12/13 10:22	11/13/13 13:22 Analyzed 11/13/13 13:22 11/13/13 13:22 Analyzed	Dil Fa
Analyte Diesel Range Organics [C10-C28] Surrogate o-Terphenyl o-Terphenyl General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble	Result ND %Recovery 64 74 Result 2.0 98	Qualifier Qualifier Qualifier	8.4 Limits 60 - 140 60 - 140 RL 1.0 1.0	RL	mg/Kg Unit % %	<u> </u>	11/12/13 10:22 Prepared 11/12/13 10:22 11/12/13 10:22 Prepared	11/13/13 13:22 Analyzed 11/13/13 13:22 11/13/13 13:22 11/13/13 13:22 11/13/13 13:22 11/13/13 13:22 11/13/13 13:22 11/13/13 13:22 11/07/13 13:58 11/07/13 13:58	Dil Fa
Analyte Diesel Range Organics [C10-C28] Surrogate o-Terphenyl o-Terphenyl General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte	Result Result Result Result Result Result	Qualifier Qualifier	8.4 Limits 60 - 140 60 - 140 RL 1.0 1.0 RL	RL	mg/Kg Unit % Unit	<u>D</u>	11/12/13 10:22 Prepared 11/12/13 10:22 11/12/13 10:22	11/13/13 13:22 Analyzed 11/13/13 13:22 11/13/13 13:22 11/13/13 13:22 11/13/13 13:22 11/13/13 13:22 Analyzed 11/07/13 13:58 11/07/13 13:58 11/07/13 13:58 13:58 11/07/13 13:58	Dil Fac
Analyte Diesel Range Organics [C10-C28] Surrogate o-Terphenyl o-Terphenyl General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble	Result ND %Recovery 64 74 Result 2.0 98	Qualifier Qualifier Qualifier	8.4 Limits 60 - 140 60 - 140 RL 1.0 1.0	RL	mg/Kg Unit % %	<u> </u>	11/12/13 10:22 Prepared 11/12/13 10:22 11/12/13 10:22 Prepared	11/13/13 13:22 Analyzed 11/13/13 13:22 11/13/13 13:22 11/13/13 13:22 11/13/13 13:22 11/13/13 13:22 11/13/13 13:22 11/13/13 13:22 11/07/13 13:58 11/07/13 13:58	Dil Fa
Analyte Diesel Range Organics [C10-C28] Surrogate o-Terphenyl o-Terphenyl General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte	Result ND %Recovery 64 74 Result 2.0 98 Result 21	Qualifier Qualifier Qualifier	8.4 Limits 60 - 140 60 - 140 RL 1.0 1.0 RL	RL	mg/Kg Unit % Unit	<u>D</u>	11/12/13 10:22 Prepared 11/12/13 10:22 11/12/13 10:22 Prepared Prepared	11/13/13 13:22 Analyzed 11/13/13 13:22 11/13/13 13:22 11/13/13 13:22 11/13/13 13:22 11/13/13 13:22 Analyzed 11/07/13 13:58 11/07/13 13:58 11/07/13 13:58 13:58 11/07/13 13:58	Dil Fa Dil Fa Dil Fa

Method: 8015B - Gasoline Ran Analyte	• • •	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
WI Gasoline Range Organics (C6-C10)	1.9		1.0		mg/Kg	<u></u>	11/08/13 12:17	11/12/13 01:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene			50 - 150				11/08/13 12:17	11/12/13 01:51	1
4-Bromofluorobenzene	92		50 - 150				11/08/13 12:17	11/12/13 01:51	1

TestAmerica Job ID: 600-82260-1

	3-10						Lab Samp	le ID: 600-82	260-26
Client Sample ID: SKU936-0 Date Collected: 11/04/13 12:44	0 10						Lub Gump		x: Solid
Date Received: 11/07/13 07:01								Percent Soli	
-									
Method: 8021B - Volatile Organi	c Compounds ((GC)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.020		mg/Kg	\$	11/07/13 10:36	11/14/13 14:52	1
Toluene	ND		0.020		mg/Kg	¢	11/07/13 10:36	11/14/13 14:52	1
Ethylbenzene	ND		0.020		mg/Kg	¢	11/07/13 10:36	11/14/13 14:52	1
Xylenes, Total	ND		0.020		mg/Kg	¢	11/07/13 10:36	11/14/13 14:52	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene			43 - 141				11/07/13 10:36	11/14/13 14:52	1
a,a,a-Trifluorotoluene	103		44 - 134				11/07/13 10:36	11/14/13 14:52	1
- Method: 8015B - Diesel Range O	Organics (DRO)	(GC)							
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		8.5		mg/Kg		11/11/13 09:58	11/12/13 18:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl			60 - 140				11/11/13 09:58	11/12/13 18:54	1
	00		00 - 140				111111000.00	11/12/10 10:04	,
General Chemistry	Decult	Qualifier	RL		11	D	Drenered	Analyzad	
Analyte		Quaimer		RL	Unit %	D	Prepared	Analyzed 11/07/13 13:58	Dil Fac
Percent Moisture	2.4								1
Percent Solids	98		1.0		%			11/07/13 13:58	1
General Chemistry - Soluble									
A	Decult	O			11			Analyzed	Dil Fac
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared		DIFAC
Chloride		Quaimer	4.1 RL	MDL	mg/Kg	— D	Prepared	11/16/13 23:14	1
Chloride	7.7	Quaimer		MDL					1
	7.7	Quaimer		MDL				11/16/13 23:14	1
Chloride Client Sample ID: SKU936-0 Date Collected: 11/04/13 12:46	7.7	Quaimer						11/16/13 23:14	1 260-27 x: Solid
Chloride Client Sample ID: SKU936-0 Date Collected: 11/04/13 12:46								11/16/13 23:14 le ID: 600-82 Matri	1 260-27 x: Solid
Chloride Client Sample ID: SKU936-0 Date Collected: 11/04/13 12:46 Date Received: 11/07/13 07:01	- 7.7 3-15 e Organics - (G			MDL	mg/Kg			11/16/13 23:14 le ID: 600-82 Matri	1 260-27 x: Solid
Chloride Client Sample ID: SKU936-0 Date Collected: 11/04/13 12:46 Date Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte WI Gasoline Range Organics	- 7.7 3-15 e Organics - (G	C)	4.1		mg/Kg		Lab Samp	11/16/13 23:14 le ID: 600-82 Matri Percent Soli	1 260-27 x: Solid ds: 98.2
Chloride Client Sample ID: SKU936-0 pate Collected: 11/04/13 12:46 pate Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte WI Gasoline Range Organics (C6-C10)	2-15 e Organics - (G Result 1.7	C) Qualifier	4.1		mg/Kg		Lab Samp Prepared 11/08/13 12:17	Analyzed 11/12/13 02:16	1 260-27 x: Solid ds: 98.2 Dil Fac
Chloride Client Sample ID: SKU936-0 Date Collected: 11/04/13 12:46 Date Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte WI Gasoline Range Organics (C6-C10) Surrogate	7.7 3-15 e Organics - (G Result 1.7 %Recovery	C) Qualifier	4.1 		mg/Kg		Prepared 11/08/13 12:17 Prepared	11/16/13 23:14 le ID: 600-82 Matri Percent Soli Analyzed 11/12/13 02:16 Analyzed	1 260-27 (x: Solid ds: 98.2 Dil Fac
Chloride Client Sample ID: SKU936-0 Date Collected: 11/04/13 12:46 Date Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte WI Gasoline Range Organics (C6-C10) Surrogate a,a,a-Trifluorotoluene	7.7 3-15 e Organics - (G Result 1.7 %Recovery 104	C) Qualifier	4.1 4.1 RL 1.0 <u>Limits</u> 50 - 150		mg/Kg		Prepared 11/08/13 12:17 Prepared 11/08/13 12:17	Analyzed 11/12/13 02:16	1 260-27 (x: Solid ds: 98.2 Dil Fac 1 Dil Fac
Chloride Client Sample ID: SKU936-0 Date Collected: 11/04/13 12:46 Date Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte WI Gasoline Range Organics (C6-C10) Surrogate	7.7 3-15 e Organics - (G Result 1.7 %Recovery	C) Qualifier	4.1 		mg/Kg		Prepared 11/08/13 12:17 Prepared	11/16/13 23:14 le ID: 600-82 Matri Percent Soli Analyzed 11/12/13 02:16 Analyzed	1 260-27 x: Solid ds: 98.2 Dil Fac
Chloride Client Sample ID: SKU936-0 Date Collected: 11/04/13 12:46 Date Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte WI Gasoline Range Organics (C6-C10) Surrogate a,a,a-Trifluorotoluene 4-Bromofluorobenzene Method: 8021B - Volatile Organic	7.7 3-15 e Organics - (G Result 1.7 %Recovery 104 95 c Compounds	C) Qualifier <i>Qualifier</i> (GC)	4.1 	MDL	Unit mg/Kg	D	Prepared 11/08/13 12:17 Prepared 11/08/13 12:17 11/08/13 12:17	Analyzed 11/12/13 02:16	1 260-27 (x: Solid ds: 98.2 Dil Fac 1 Dil Fac 1 1
Chloride Client Sample ID: SKU936-0 Date Collected: 11/04/13 12:46 Date Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte WI Gasoline Range Organics (C6-C10) Surrogate a,a,a-Trifluorotoluene 4-Bromofluorobenzene Method: 8021B - Volatile Organic Analyte	7.7 3-15 e Organics - (G Result 1.7 %Recovery 104 95 c Compounds Result	C) Qualifier Qualifier	4.1 		Unit Unit	D	Prepared 11/08/13 12:17 Prepared 11/08/13 12:17 11/08/13 12:17 Prepared Prepared Prepared	11/16/13 23:14 le ID: 600-82 Matri Percent Soli Analyzed 11/12/13 02:16 11/12/13 02:16 11/12/13 02:16 Analyzed	1 260-27 x: Solid ds: 98.2 Dil Fac 1 Dil Fac 7
Chloride Client Sample ID: SKU936-0 Date Collected: 11/04/13 12:46 Date Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte WI Gasoline Range Organics (C6-C10) Surrogate a,a,a-Trifluorotoluene 4-Bromofluorobenzene Method: 8021B - Volatile Organic Analyte Benzene	7.7 3-15 e Organics - (G Result 1.7 %Recovery 104 95 c Compounds Result ND	C) Qualifier <i>Qualifier</i> (GC)	4.1 RL 1.0 Limits 50 - 150 50 - 150 S0 - 150 RL 0.020	MDL	Unit mg/Kg	D X	Prepared 11/08/13 12:17 Prepared 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17	11/16/13 23:14 Ie ID: 600-82 Matri Percent Soli 11/12/13 02:16 11/12/13 02:16 11/12/13 02:16 11/12/13 02:16 11/12/13 02:16 11/12/13 02:16 11/12/13 02:16 11/12/13 02:16 11/12/13 02:16 11/12/13 02:16 11/12/13 02:16 11/12/13 02:16	1 260-27 ix: Solid ds: 98.2 Dil Fac 1 Dil Fac 1 1
Chloride Client Sample ID: SKU936-0 Date Collected: 11/04/13 12:46 Date Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte WI Gasoline Range Organics (C6-C10) Surrogate a,a,a-Trifluorotoluene 4-Bromofluorobenzene Method: 8021B - Volatile Organic Analyte	7.7 3-15 e Organics - (G Result 1.7 %Recovery 104 95 c Compounds Result ND ND	C) Qualifier <i>Qualifier</i> (GC)	4.1 	MDL	Unit mg/Kg mg/Kg mg/Kg mg/Kg	D X	Prepared 11/08/13 12:17 Prepared 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 11/07/13 10:36 11/07/13 10:36	11/16/13 23:14 le ID: 600-82 Matri Percent Soli Analyzed 11/12/13 02:16 11/12/13 02:16 11/12/13 02:16 Analyzed	1 260-27 x: Solid ds: 98.2 Dil Fac 1 1 1 Dil Fac
Chloride Client Sample ID: SKU936-0 Date Collected: 11/04/13 12:46 Date Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte WI Gasoline Range Organics (C6-C10) Surrogate a,a,a-Trifluorotoluene 4-Bromofluorobenzene Method: 8021B - Volatile Organic Analyte Benzene	7.7 3-15 e Organics - (G Result 1.7 %Recovery 104 95 c Compounds Result ND	C) Qualifier <i>Qualifier</i> (GC)	4.1 RL 1.0 Limits 50 - 150 50 - 150 S0 - 150 RL 0.020	MDL	Unit mg/Kg	D X	Prepared 11/08/13 12:17 Prepared 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17	11/16/13 23:14 Ie ID: 600-82 Matri Percent Soli 11/12/13 02:16 11/12/13 02:16 11/12/13 02:16 11/12/13 02:16 11/12/13 02:16 11/12/13 02:16 11/12/13 02:16 11/12/13 02:16 11/12/13 02:16 11/12/13 02:16 11/12/13 02:16 11/12/13 02:16	1 260-27 x: Solid ds: 98.2 Dil Fac 1 1 1 Dil Fac
Chloride Client Sample ID: SKU936-0 Date Collected: 11/04/13 12:46 Date Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte WI Gasoline Range Organics (C6-C10) Surrogate a,a,a-Trifluorotoluene 4-Bromofluorobenzene Method: 8021B - Volatile Organic Analyte Benzene Toluene	7.7 3-15 e Organics - (G Result 1.7 %Recovery 104 95 c Compounds Result ND ND	C) Qualifier <i>Qualifier</i> (GC)	4.1 	MDL	Unit mg/Kg mg/Kg mg/Kg mg/Kg	D X	Prepared 11/08/13 12:17 Prepared 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 11/07/13 10:36 11/07/13 10:36	Analyzed 11/12/13 02:16 Analyzed 11/12/13 02:16 11/12/13 02:16 11/12/13 02:16 11/12/13 02:16 11/12/13 02:16 11/12/13 02:16 11/12/13 02:16 11/12/13 02:16 11/12/13 02:16 11/12/13 02:16 11/12/13 02:16	1 260-27 x: Solid ds: 98.2 Dil Fac 1 1 1 Dil Fac 1 1 1 1
Chloride Client Sample ID: SKU936-0 Date Collected: 11/04/13 12:46 Date Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte WI Gasoline Range Organics (C6-C10) Surrogate a,a,a-Trifluorotoluene 4-Bromofluorobenzene Method: 8021B - Volatile Organic Analyte Benzene Toluene Ethylbenzene	7.7 3-15 e Organics - (G Result 1.7 %Recovery 104 95 c Compounds Result ND ND ND	C) Qualifier <i>Qualifier</i> (GC) Qualifier	4.1 RL 1.0 Limits 50 - 150 50 - 150 S0 - 150 RL 0.020 0.020 0.020 0.020 0.020	MDL	Unit mg/Kg Ug/Kg mg/Kg mg/Kg mg/Kg	D D D Z Z	Prepared 11/08/13 12:17 Prepared 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36	Analyzed 11/15/13 23:14 Ie ID: 600-82 Matri Percent Soli Analyzed 11/12/13 02:16 11/12/13 02:16 11/12/13 02:16 11/12/13 02:16 11/12/13 02:16 11/12/13 02:16 11/15/13 16:05 11/15/13 16:05 11/15/13 16:05 11/15/13 16:05	1 260-27 x: Solid ds: 98.2 Dil Fac 1 1 Dil Fac 1 1 1 1 1 1 1
Chloride Client Sample ID: SKU936-0 Date Collected: 11/04/13 12:46 Date Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte WI Gasoline Range Organics (C6-C10) Surrogate a,a,a-Trifluorotoluene 4-Bromofluorobenzene Method: 8021B - Volatile Organic Analyte Benzene Toluene Ethylbenzene Xylenes, Total	7.7 3-15 e Organics - (G Result 1.7 %Recovery 104 95 c Compounds Result ND ND ND ND ND	C) Qualifier <i>Qualifier</i> (GC) Qualifier	4.1 RL 1.0 Limits 50 - 150 50 - 150 50 - 150 RL 0.020 0.020 0.020 0.020 0.020 0.020 0.020	MDL	Unit mg/Kg Ug/Kg mg/Kg mg/Kg mg/Kg	D D D Z Z	Prepared 11/08/13 12:17 Prepared 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36	III/16/13 23:14 11/16/13 23:14 Ie ID: 600-82 Matri Percent Soli Analyzed 11/12/13 02:16 11/12/13 02:16 11/12/13 02:16 11/12/13 02:16 11/12/13 02:16 11/12/13 02:16 11/15/13 16:05 11/15/13 16:05 11/15/13 16:05 11/15/13 16:05 11/15/13 16:05 11/15/13 16:05 11/15/13 16:05	1 260-27 x: Solid ds: 98.2 Dil Fac 1 1 Dil Fac 1 1 1 1 1 1 1
Chloride Client Sample ID: SKU936-0 Date Collected: 11/04/13 12:46 Date Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte WI Gasoline Range Organics (C6-C10) Surrogate a,a,a-Trifluorotoluene 4-Bromofluorobenzene Method: 8021B - Volatile Organic Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surrogate	7.7 3-15 e Organics - (G Result 1.7 %Recovery 104 95 c Compounds Result ND ND ND ND ND %Recovery	C) Qualifier <i>Qualifier</i> (GC) Qualifier	4.1 RL 1.0 Limits 50 - 150 50 - 150 50 - 150 RL 0.020 0.020 0.020 0.020 0.020 0.020 Limits	MDL	Unit mg/Kg Ug/Kg mg/Kg mg/Kg mg/Kg	D D D Z Z	Prepared 11/08/13 12:17 Prepared 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36	11/16/13 23:14 11/16/13 23:14 Ie ID: 600-82 Matri Percent Soli Analyzed 11/12/13 02:16 11/12/13 02:16 11/12/13 02:16 11/12/13 02:16 11/12/13 02:16 11/15/13 16:05 11/15/13 16:05 11/15/13 16:05 11/15/13 16:05 11/15/13 16:05 11/15/13 16:05 11/15/13 16:05 11/15/13 16:05 11/15/13 16:05 11/15/13 16:05 Analyzed	1 260-27 x: Solid ds: 98.2 Dil Fac 1 Dil Fac 1 1 Dil Fac 1 1 Dil Fac
Chloride Chloride Client Sample ID: SKU936-0 Date Collected: 11/04/13 12:46 Date Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte WI Gasoline Range Organics (C6-C10) Surrogate a,a,a-Trifluorotoluene 4-Bromofluorobenzene Method: 8021B - Volatile Organic Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surrogate a,a,a-Trifluorotoluene a,a,a-Trifluorotoluene	7.7 3-15 e Organics - (G Result 1.7 %Recovery 104 95 c Compounds Result ND ND ND ND ND ND ND ND S5	C) Qualifier Qualifier (GC) Qualifier Qualifier	4.1 RL 1.0 Limits 50 - 150 50 - 150 50 - 150 0.020 0.020 0.020 0.020 0.020 0.020 0.020 Limits 43 - 141	MDL	Unit mg/Kg Ug/Kg mg/Kg mg/Kg mg/Kg	D D D Z Z	Prepared 11/08/13 12:17 Prepared 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36	11/16/13 23:14 Ie ID: 600-82 Matri Percent Soli Analyzed 11/12/13 02:16 Analyzed 11/12/13 02:16 11/12/13 02:16 11/12/13 02:16 11/12/13 02:16 11/12/13 02:16 11/15/13 16:05 11/15/13 16:05 11/15/13 16:05 11/15/13 16:05 11/15/13 16:05 11/15/13 16:05 11/15/13 16:05 11/15/13 16:05 11/15/13 16:05 11/15/13 16:05 11/15/13 16:05 11/15/13 16:05 11/15/13 16:05 11/15/13 16:05 11/15/13 16:05	1 260-27 x: Solid ds: 98.2 Dil Fac 1 Dil Fac 1 1 Dil Fac 1 1 1 Dil Fac 1 1 1 1 1 1 1 1 1 1 1 1 1
Chloride Client Sample ID: SKU936-0 Date Collected: 11/04/13 12:46 Date Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte WI Gasoline Range Organics (C6-C10) Surrogate a,a,a-Trifluorotoluene 4-Bromofluorobenzene Method: 8021B - Volatile Organic Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surrogate 4-Bromofluorobenzene	7.7 3-15 e Organics - (G Result 1.7 %Recovery 104 95 c Compounds (Result ND ND ND ND ND ND ND ND S5 Organics (DRO)	C) Qualifier Qualifier (GC) Qualifier Qualifier	4.1 RL 1.0 Limits 50 - 150 50 - 150 50 - 150 0.020 0.020 0.020 0.020 0.020 0.020 0.020 Limits 43 - 141	MDL	Unit mg/Kg mg/Kg mg/Kg mg/Kg mg/Kg	D D D Z Z	Prepared 11/08/13 12:17 Prepared 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36	11/16/13 23:14 Ie ID: 600-82 Matri Percent Soli Analyzed 11/12/13 02:16 Analyzed 11/12/13 02:16 11/12/13 02:16 11/12/13 02:16 11/12/13 02:16 11/12/13 02:16 11/15/13 16:05 11/15/13 16:05 11/15/13 16:05 11/15/13 16:05 11/15/13 16:05 11/15/13 16:05 11/15/13 16:05 11/15/13 16:05 11/15/13 16:05 11/15/13 16:05 11/15/13 16:05 11/15/13 16:05 11/15/13 16:05 11/15/13 16:05 11/15/13 16:05	1 260-27 x: Solid ds: 98.2 Dil Fac 1 Dil Fac 1 1 Dil Fac 1 1 1 Dil Fac 1 1 1 1 1 1 1 1 1 1 1 1 1

lient Sample ID: SKU936-03							Lah Samn	le ID: 600-82	260-27
ate Collected: 11/04/13 12:46	-13						Lab Gamp		ix: Solid
ate Received: 11/04/13 07:01								Percent Soli	
				·					401 0012
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	66		60 - 140				11/11/13 09:58	11/12/13 19:27	1
General Chemistry									
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	1.8		1.0		%			11/07/13 13:58	1
Percent Solids	98		1.0		%			11/07/13 13:58	1
Constant Caluble									
General Chemistry - Soluble Analyte	Posult	Qualifier	RL	МП	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	- <u>Kesuit</u> 11		4.1 RL		mg/Kg	— ~		11/16/13 23:28	1
								-	
lient Sample ID: SKU936-03	J-20						Lab Samp	le ID: 600-822	260-28
ate Collected: 11/04/13 12:48									ix: Solid
ate Received: 11/07/13 07:01								Percent Solie	ds: 96.7
Method: 8015B - Gasoline Range	Organics - (G	C)							
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
WI Gasoline Range Organics	1.6		1.0		mg/Kg		11/08/13 12:17	11/12/13 02:41	1
(C6-C10)									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	104		50 - 150				11/08/13 12:17	11/12/13 02:41	1
4-Bromofluorobenzene	94		50 - 150				11/08/13 12:17	11/12/13 02:41	1
Malatila Organia	O amar a un da	(20)							
Method: 8021B - Volatile Organic Analyte		(GC) Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	- <u></u>		0.021		mg/Kg		11/07/13 16:30	11/14/13 15:12	1
Toluene	ND		0.021		mg/Kg	¢	11/07/13 16:30	11/14/13 15:12	1
Ethylbenzene	ND		0.021		mg/Kg	¢	11/07/13 16:30	11/14/13 15:12	1
Xylenes, Total	ND		0.021		mg/Kg	¢	11/07/13 16:30	11/14/13 15:12	1
	~-		•/				- ,	.	
Surrogate	- %Recovery		Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	113		43 - 141				11/07/13 16:30	11/14/13 15:12	1
a,a,a-Trifluorotoluene	102		44 - 134				11/07/13 16:30	11/14/13 15:12	1
Method: 8015B - Diesel Range Or	rganics (DRO)	(GC)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		8.6		mg/Kg	<u></u>	11/11/13 09:58	11/12/13 20:01	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	67		60 - 140				11/11/13 09:58	11/12/13 20:01	1
•									
General Chemistry					· · ·	_			
Analyte		Qualifier		RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	3.3		1.0		%			11/07/13 13:58	1
Percent Solids	97		1.0		%			11/07/13 13:58	1
General Chemistry - Soluble									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
			4.1		mg/Kg	<u> </u>		11/17/13 00:08	1

TestAmerica Houston

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Client: ARCADIS U.S., Inc. Project/Site: HES Transfer Sites, Lea County NM

TestAmerica Job ID: 600-82260-1

Client Sample ID: SKU936-03	3-25						Lab Samp	le ID: 600-82	
Date Collected: 11/04/13 12:50									ix: Solid
Date Received: 11/07/13 07:01								Percent Soli	ds: 94.9
- Method: 8015B - Gasoline Range	Organics - (G	C)							
Analyte	• •	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
WI Gasoline Range Organics	2.0		1.1		mg/Kg	<u></u>	11/08/13 12:17	11/12/13 07:25	1
(C6-C10)									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	104		50 - 150				11/08/13 12:17	11/12/13 07:25	1
4-Bromofluorobenzene	89		50 - 150				11/08/13 12:17	11/12/13 07:25	1
Method: 8021B - Volatile Organic	Compounds	(GC)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	ND		0.021		mg/Kg	\$	11/07/13 10:36	11/15/13 17:37	
Toluene	ND		0.021		mg/Kg	¢	11/07/13 10:36	11/15/13 17:37	
Ethylbenzene	ND		0.021		mg/Kg	¢	11/07/13 10:36	11/15/13 17:37	
Xylenes, Total	ND		0.021		mg/Kg	¢	11/07/13 10:36	11/15/13 17:37	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene	175	X	43 - 141				11/07/13 10:36	11/15/13 17:37	
a,a,a-Trifluorotoluene	100		44 - 134				11/07/13 10:36	11/15/13 17:37	ł
Method: 8015B - Diesel Range O	rganics (DRO)	(GC)							
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Diesel Range Organics [C10-C28]	ND		8.7		mg/Kg	<u></u>	11/11/13 09:58	11/12/13 20:34	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
o-Terphenyl	62		60 - 140				11/11/13 09:58	11/12/13 20:34	
General Chemistry									
Analyte		Qualifier	RL	RL		D	Prepared	Analyzed	Dil Fa
Percent Moisture	5.1		1.0		%			11/07/13 13:58	
Percent Solids	95		1.0		%			11/07/13 13:58	
General Chemistry - Soluble									
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Chloride	300		8.4		mg/Kg	<u></u>		11/18/13 17:19	:
lient Sample ID: SKU936-04	4-02						Lab Samp	le ID: 600-82	260-30
ate Collected: 11/05/13 09:50								Matri	ix: Solid
ate Received: 11/07/13 07:01								Percent Soli	ds: 97.8
Method: 8015B - Gasoline Range	organics - (G	C)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
	2.2		1.0		mg/Kg	<u> </u>	11/09/13 12:36	11/15/13 20:12	
(C6-C10)	%Recoverv	Qualifier	Limits				Prepared	Analvzed	Dil Fa
(C6-C10) Surrogate	%Recovery	Qualifier	·				Prepared	Analyzed	
		Qualifier	Limits 50 - 150 50 - 150				Prepared 11/09/13 12:36 11/09/13 12:36	Analyzed 11/15/13 20:12 11/15/13 20:12	
(C6-C10) Surrogate a,a,a-Trifluorotoluene 4-Bromofluorobenzene	104 92		50 - 150				11/09/13 12:36	11/15/13 20:12	
(C6-C10) Surrogate a,a,a-Trifluorotoluene 4-Bromofluorobenzene Method: 8021B - Volatile Organic	104 92 c Compounds	(GC)	50 - 150 50 - 150	MDI	Unit	п	11/09/13 12:36 11/09/13 12:36	11/15/13 20:12 11/15/13 20:12	
(C6-C10) Surrogate a,a,a-Trifluorotoluene 4-Bromofluorobenzene Method: 8021B - Volatile Organic Analyte	104 92 Compounds Result		50 - 150 50 - 150 RL	MDL	Unit ma/Ka	D	11/09/13 12:36 11/09/13 12:36 Prepared	11/15/13 20:12 11/15/13 20:12 Analyzed	Dil Fac
a,a,a-Trifluorotoluene	104 92 c Compounds	(GC)	50 - 150 50 - 150	MDL	Unit mg/Kg mg/Kg	D x *	11/09/13 12:36 11/09/13 12:36	11/15/13 20:12 11/15/13 20:12	Dil Fac

TestAmerica Houston

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Client: ARCADIS U.S., Inc. Project/Site: HES Transfer Sites, Lea County NM

Client Sample ID: SKU936-04-02

Date Collected: 11/05/13 09:50

Date Received: 11/07/13 07:01

Lab Sample ID: 600-82260-30 Matrix: Solid Percent Solids: 97.8

5 6 7

Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	ND		0.020		mg/Kg		11/07/13 10:36	11/15/13 18:04	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene	107		43 - 141				11/07/13 10:36	11/15/13 18:04	1
a,a,a-Trifluorotoluene	102		44 - 134				11/07/13 10:36	11/15/13 18:04	
Method: 8015B - Diesel Range Or	ganics (DRO)	(GC)							
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Diesel Range Organics [C10-C28]	ND		8.5		mg/Kg	<u></u>	11/11/13 09:58	11/13/13 06:23	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
o-Terphenyl	69		60 - 140				11/11/13 09:58	11/13/13 06:23	1
General Chemistry									
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fa
Percent Moisture	2.2		1.0		%			11/08/13 14:11	
Percent Solids	98		1.0		%			11/08/13 14:11	
General Chemistry - Soluble Analyte	Result	Qualifier	RL	мы	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	390	Quanner	8.2		mg/Kg	— -	riepareu	11/18/13 23:31	
ate Collected: 11/05/13 09:52	-05								x: Soli
ate Collected: 11/05/13 09:52	-05								x: Solid
ate Collected: 11/05/13 09:52 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Range	Organics - (G							Matri Percent Soli	x: Solio ds: 98.′
ate Collected: 11/05/13 09:52 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte	Organics - (G Result	C) Qualifier	RL	MDL	Unit	D	Prepared	Matri Percent Soli Analyzed	x: Solic ds: 98.1 Dil Fac
Client Sample ID: SKU936-04 ate Collected: 11/05/13 09:52 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte WI Gasoline Range Organics (C6-C10)	Organics - (G		RL	MDL	Unit mg/Kg	D		Matri Percent Soli	x: Solid ds: 98.4 Dil Fad
ate Collected: 11/05/13 09:52 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte WI Gasoline Range Organics	Organics - (G Result	Qualifier		MDL			Prepared	Matri Percent Soli Analyzed	x: Solid ds: 98.4 Dil Fa
ate Collected: 11/05/13 09:52 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte WI Gasoline Range Organics (C6-C10) Surrogate	Organics - (G Result 2.5	Qualifier	1.0	MDL			Prepared 11/09/13 12:36	Matri Percent Soli Analyzed 11/15/13 20:37	x: Solic ds: 98.1 Dil Fac
ate Collected: 11/05/13 09:52 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte WI Gasoline Range Organics (C6-C10) Surrogate a,a,a-Trifluorotoluene	Organics - (G Result 2.5 %Recovery	Qualifier	1.0 Limits	MDL			Prepared 11/09/13 12:36 Prepared	Matri Percent Soli Analyzed 11/15/13 20:37 Analyzed	x: Solid ds: 98.4 Dil Fa Dil Fa
ate Collected: 11/05/13 09:52 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte WI Gasoline Range Organics (C6-C10) Surrogate a.a.a-Trifluorotoluene 4-Bromofluorobenzene	Organics - (G Result 2.5 %Recovery 104 92	Qualifier	1.0 Limits 50 - 150	MDL			Prepared 11/09/13 12:36 Prepared 11/09/13 12:36	Matri Percent Solid Analyzed 11/15/13 20:37 Analyzed 11/15/13 20:37	x: Solid ds: 98. Dil Fa Dil Fa
ate Collected: 11/05/13 09:52 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte WI Gasoline Range Organics (C6-C10) Surrogate a,a,a-Trifluorotoluene 4-Bromofluorobenzene Method: 8021B - Volatile Organic	Organics - (G Result 2.5 %Recovery 104 92 Compounds (Qualifier	1.0 Limits 50 - 150				Prepared 11/09/13 12:36 Prepared 11/09/13 12:36	Matri Percent Solid Analyzed 11/15/13 20:37 Analyzed 11/15/13 20:37	x: Solic ds: 98. Dil Fa Dil Fa
ate Collected: 11/05/13 09:52 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte WI Gasoline Range Organics (C6-C10) Surrogate a,a,a-Trifluorotoluene 4-Bromofluorobenzene Method: 8021B - Volatile Organic Analyte	Organics - (G Result 2.5 %Recovery 104 92 Compounds (Qualifier Qualifier	1.0 Limits 50 - 150 50 - 150		mg/Kg	<u> </u>	Prepared 11/09/13 12:36 Prepared 11/09/13 12:36 11/09/13 12:36	Matri Percent Solid 11/15/13 20:37 Analyzed 11/15/13 20:37 11/15/13 20:37	x: Solic ds: 98. Dil Fa Dil Fa
ate Collected: 11/05/13 09:52 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte WI Gasoline Range Organics (C6-C10) Surrogate a,a,a-Trifluorotoluene 4-Bromofluorobenzene Method: 8021B - Volatile Organic Analyte Benzene	Organics - (G Result 2.5 %Recovery 104 92 Compounds (Result	Qualifier Qualifier	1.0 <i>Limits</i> 50 - 150 50 - 150 RL		mg/Kg	[‡]	Prepared 11/09/13 12:36 Prepared 11/09/13 12:36 11/09/13 12:36 Prepared	Matri Percent Solid 11/15/13 20:37 Analyzed 11/15/13 20:37 11/15/13 20:37 Analyzed	x: Solid ds: 98. Dil Fa Dil Fa
ate Collected: 11/05/13 09:52 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte WI Gasoline Range Organics (C6-C10) Surrogate a,a,a-Trifluorotoluene 4-Bromofluorobenzene Method: 8021B - Volatile Organic Analyte Benzene Toluene	Organics - (G Result 2.5 %Recovery 104 92 Compounds (Result ND	Qualifier Qualifier	1.0 Limits 50 - 150 50 - 150 RL 0.020		mg/Kg Unit mg/Kg	<u> </u>	Prepared 11/09/13 12:36 Prepared 11/09/13 12:36 11/09/13 12:36 11/09/13 12:36 Prepared 11/07/13 10:36	Matri Percent Soli 11/15/13 20:37 Analyzed 11/15/13 20:37 11/15/13 20:37 11/15/13 20:37 11/15/13 18:42	x: Solic ds: 98. Dil Fa Dil Fa
ate Collected: 11/05/13 09:52 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte WI Gasoline Range Organics (C6-C10) Surrogate a,a,a-Trifluorotoluene 4-Bromofluorobenzene Method: 8021B - Volatile Organic Analyte Benzene Toluene Ethylbenzene	Organics - (G Result 2.5 %Recovery 104 92 Compounds (Result ND ND	Qualifier Qualifier	1.0 Limits 50 - 150 50 - 150 RL 0.020 0.020		Unit mg/Kg mg/Kg	<u> </u>	Prepared 11/09/13 12:36 Prepared 11/09/13 12:36 11/09/13 12:36 11/09/13 12:36 11/07/13 10:36 11/07/13 10:36	Matri Percent Solid Analyzed 11/15/13 20:37 Analyzed 11/15/13 20:37 11/15/13 20:37 11/15/13 18:42 11/15/13 18:42	x: Solid ds: 98. Dil Fa Dil Fa
ate Collected: 11/05/13 09:52 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte WI Gasoline Range Organics (C6-C10) Surrogate a,a,a-Trifluorotoluene	Organics - (G Result 2.5 %Recovery 104 92 Compounds (Result ND ND ND	Qualifier Qualifier GC) Qualifier	1.0 Limits 50 - 150 50 - 150 RL 0.020 0.020 0.020		Unit mg/Kg mg/Kg mg/Kg	D = D	Prepared 11/09/13 12:36 Prepared 11/09/13 12:36 11/09/13 12:36 11/09/13 12:36 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36	Matri Percent Soli Analyzed 11/15/13 20:37 Analyzed 11/15/13 20:37 11/15/13 20:37 11/15/13 18:42 11/15/13 18:42 11/15/13 18:42 11/15/13 18:42	x: Solic ds: 98.1 Dil Fa Dil Fa
ate Collected: 11/05/13 09:52 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte WI Gasoline Range Organics (C6-C10) Surrogate a,a,a-Trifluorotoluene 4-Bromofluorobenzene Method: 8021B - Volatile Organic Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surrogate	Organics - (G Result 2.5 %Recovery 104 92 Compounds (Result ND ND ND ND	Qualifier Qualifier GC) Qualifier	1.0 Limits 50 - 150 50 - 150 RL 0.020 0.020 0.020 0.020		Unit mg/Kg mg/Kg mg/Kg	D = D	Prepared 11/09/13 12:36 Prepared 11/09/13 12:36 11/09/13 12:36 11/09/13 12:36 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36	Matri Percent Solid Analyzed 11/15/13 20:37 Analyzed 11/15/13 20:37 11/15/13 20:37 11/15/13 18:42 11/15/13 18:42 11/15/13 18:42 11/15/13 18:42	x: Solic ds: 98.1 Dil Fa Dil Fa
ate Collected: 11/05/13 09:52 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte WI Gasoline Range Organics (C6-C10) Surrogate a,a,a-Trifluorotoluene 4-Bromofluorobenzene Method: 8021B - Volatile Organic Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surrogate 4-Bromofluorobenzene	Organics - (G Result 2.5 %Recovery 104 92 Compounds (Result ND ND ND ND ND	Qualifier Qualifier GC) Qualifier	1.0 Limits 50 - 150 50 - 150 RL 0.020 0.020 0.020 0.020 Limits		Unit mg/Kg mg/Kg mg/Kg	D = D	Prepared 11/09/13 12:36 Prepared 11/09/13 12:36 11/09/13 12:36 11/09/13 12:36 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36 Prepared Prepared	Matri Percent Solid Analyzed 11/15/13 20:37 Analyzed 11/15/13 20:37 11/15/13 20:37 11/15/13 18:42 11/15/13 18:42 11/15/13 18:42 11/15/13 18:42 11/15/13 18:42 11/15/13 18:42	x: Solid ds: 98.4 Dil Fa Dil Fa Dil Fa
ate Collected: 11/05/13 09:52 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte WI Gasoline Range Organics (C6-C10) Surrogate a,a,a-Trifluorotoluene 4-Bromofluorobenzene Method: 8021B - Volatile Organic Analyte Benzene Toluene Ethylbenzene Xylenes, Total	Organics - (G Result 2.5 %Recovery 104 92 Compounds (Result ND ND ND ND ND ND ND 97 91	Qualifier Qualifier GC) Qualifier Qualifier	1.0 Limits 50 - 150 50 - 150 RL 0.020 0.020 0.020 0.020 Limits 43 - 141		Unit mg/Kg mg/Kg mg/Kg	D = D	Prepared 11/09/13 12:36 Prepared 11/09/13 12:36 11/09/13 12:36 11/09/13 12:36 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36 Prepared 11/07/13 10:36	Matri Percent Solid Analyzed 11/15/13 20:37 Analyzed 11/15/13 20:37 11/15/13 20:37 11/15/13 18:42 11/15/13 18:42 11/15/13 18:42 11/15/13 18:42 11/15/13 18:42 11/15/13 18:42	x: Solid ds: 98.4 Dil Fa Dil Fa Dil Fa
ate Collected: 11/05/13 09:52 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte WI Gasoline Range Organics (C6-C10) Surrogate a,a,a-Trifluorotoluene 4-Bromofluorobenzene Method: 8021B - Volatile Organic Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surrogate 4-Bromofluorobenzene a,a,a-Trifluorotoluene Method: 8015B - Diesel Range Or	Organics - (G Result 2.5 %Recovery 104 92 Compounds (Result ND ND ND ND ND ND ND ND ND ND ND ND ND	Qualifier Qualifier GC) Qualifier Qualifier	1.0 Limits 50 - 150 50 - 150 RL 0.020 0.020 0.020 0.020 Limits 43 - 141	MDL	Unit mg/Kg mg/Kg mg/Kg	D = D	Prepared 11/09/13 12:36 Prepared 11/09/13 12:36 11/09/13 12:36 11/09/13 12:36 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36 Prepared 11/07/13 10:36	Matri Percent Solid Analyzed 11/15/13 20:37 Analyzed 11/15/13 20:37 11/15/13 20:37 11/15/13 18:42 11/15/13 18:42 11/15/13 18:42 11/15/13 18:42 11/15/13 18:42 11/15/13 18:42	x: Solic ds: 98.1 Dil Fac Dil Fac
ate Collected: 11/05/13 09:52 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte WI Gasoline Range Organics (C6-C10) Surrogate a.a.a-Trifluorotoluene 4-Bromofluorobenzene Method: 8021B - Volatile Organic Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surrogate 4-Bromofluorobenzene a.a.a-Trifluorotoluene	Organics - (G Result 2.5 %Recovery 104 92 Compounds (Result ND ND ND ND ND ND ND ND ND ND ND ND ND	Qualifier Qualifier GC) Qualifier Qualifier (GC)	1.0 Limits 50 - 150 50 - 150 RL 0.020 0.020 0.020 0.020 Limits 43 - 141 44 - 134	MDL	Unit mg/Kg mg/Kg mg/Kg mg/Kg		Prepared 11/09/13 12:36 Prepared 11/09/13 12:36 11/09/13 12:36 11/09/13 12:36 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36	Matri Percent Solid Analyzed 11/15/13 20:37 Analyzed 11/15/13 20:37 11/15/13 20:37 Analyzed 11/15/13 18:42 11/15/13 18:42 11/15/13 18:42 11/15/13 18:42 11/15/13 18:42	x: Solid
ate Collected: 11/05/13 09:52 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte WI Gasoline Range Organics (C6-C10) Surrogate a.a.a-Trifluorotoluene 4-Bromofluorobenzene Method: 8021B - Volatile Organic Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surrogate 4-Bromofluorobenzene a.a.a-Trifluorotoluene Method: 8015B - Diesel Range Or Analyte	Organics - (G Result 2.5 %Recovery 104 92 Compounds (Result ND ND ND ND ND ND ND ND ND ND ND ND ND	Qualifier Qualifier Qualifier Qualifier (GC) Qualifier	1.0 Limits 50 - 150 50 - 150 RL 0.020 0.020 0.020 0.020 Limits 43 - 141 44 - 134 RL	MDL	Unit mg/Kg mg/Kg mg/Kg mg/Kg mg/Kg		Prepared 11/09/13 12:36 Prepared 11/09/13 12:36 11/09/13 12:36 11/09/13 12:36 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36 Prepared 11/07/13 10:36	Matri Percent Solii Analyzed 11/15/13 20:37 Analyzed 11/15/13 20:37 11/15/13 20:37 Analyzed 11/15/13 18:42 11/15/13 18:42 11/15/13 18:42 11/15/13 18:42 11/15/13 18:42 11/15/13 18:42 Analyzed Analyzed	x: Solic ds: 98.1 Dil Fac Dil Fac Dil Fac

TestAmerica Houston

Client: ARCADIS U.S., Inc. Project/Site: HES Transfer Sites, Lea County NM TestAmerica Job ID: 600-82260-1

lient Sample ID: SKU936-0	4-05						Lab Samp	le ID: 600-82	260-31
ate Collected: 11/05/13 09:52							-	Matri	ix: Solid
ate Received: 11/07/13 07:01									
General Chemistry	Decult	Qualifian	DI.	ы	11		Duomonod	Amalyzad	
Analyte		Qualifier		RL	Unit %	D	Prepared	Analyzed	Dil Fa
Percent Moisture	1.9								
Percent Solids	98		1.0		%			11/08/13 14:11	
General Chemistry - Soluble									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Chloride	23		4.1		mg/Kg			11/18/13 23:47	
					0 0				
lient Sample ID: SKU936-0	4-10						Lab Samp	le ID: 600-82	260-3
ate Collected: 11/05/13 09:54									ix: Soli
ate Received: 11/07/13 07:01								Percent Soli	
Method: 8015B - Gasoline Range	e Organics - (G	C)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
WI Gasoline Range Organics	2.6		1.1		mg/Kg	¢	11/09/13 12:36	11/15/13 21:02	
(C6-C10)									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
a,a,a-Trifluorotoluene			50 - 150				11/09/13 12:36	11/15/13 21:02	
4-Bromofluorobenzene	94		50 - 150				11/09/13 12:36	11/15/13 21:02	
	01		00 - 100				11/00/10 12:00	1,1,10,10,21.02	
Method: 8021B - Volatile Organi	c Compounds ((GC)							
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	ND		0.021		mg/Kg	<u></u>	11/07/13 10:36	11/15/13 19:14	
Toluene	ND		0.021		mg/Kg	₽	11/07/13 10:36	11/15/13 19:14	
Ethylbenzene	ND		0.021		mg/Kg	¢	11/07/13 10:36	11/15/13 19:14	
Xylenes, Total	ND		0.021		mg/Kg	¢.	11/07/13 10:36	11/15/13 19:14	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene	59		43 - 141				11/07/13 10:36	11/15/13 19:14	
a,a,a-Trifluorotoluene	53		44 - 134				11/07/13 10:36	11/15/13 19:14	
Method: 8015B - Diesel Range O									
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fa
Diesel Range Organics [C10-C28]	ND		8.7		mg/Kg	¢	11/11/13 09:58	11/13/13 07:27	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
o-Terphenyl		quainter	 60 - 140				11/11/13 09:58	11/13/13 07:27	
э-тырлануі	70		00 - 140				11/11/13 09.30	11/13/13 01.21	
General Chemistry									
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fa
Percent Moisture	5.0		1.0		%			11/08/13 14:11	
Percent Solids	95		1.0		%			11/08/13 14:11	
General Chemistry - Soluble									
General Chemistry - Soluble Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa

Client: ARCADIS U.S., Inc. Project/Site: HES Transfer Sites, Lea County NM

Ethylbenzene

TestAmerica Job ID: 600-82260-1

6

Client Sample ID: SKU936-0 Date Collected: 11/05/13 09:56	J4-15						Lab Samp	le ID: 600-82 Matri	260-33 x: Solid
Date Received: 11/07/13 07:01								Percent Soli	ds: 94.8
Method: 8015B - Gasoline Rang	no Organics - (G	C)							
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
WI Gasoline Range Organics (C6-C10)	2.7		1.1		mg/Kg	<u>*</u>	11/09/13 12:36	11/15/13 21:27	1
	0/ D	0	1				Durantes	A	D# 5-
Surrogate	%Recovery 	Qualifier	Limits 50 - 150				Prepared	Analyzed 11/15/13 21:27	Dil Fac
a,a,a-Trifluorotoluene			50 - 150 50 - 150				11/09/13 12:36		1
4-Bromofluorobenzene	94		50 - 150				11/09/13 12:36	11/15/13 21:27	1
Method: 8021B - Volatile Organ	ic Compounds ((GC)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.021		mg/Kg	\$	11/07/13 10:36	11/15/13 19:36	1
Toluene	ND		0.021		mg/Kg	¢	11/07/13 10:36	11/15/13 19:36	1
Ethylbenzene	ND		0.021		mg/Kg	₽	11/07/13 10:36	11/15/13 19:36	1
Xylenes, Total	ND		0.021		mg/Kg	¢	11/07/13 10:36	11/15/13 19:36	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene			43 - 141				11/07/13 10:36	11/15/13 19:36	1
a,a,a-Trifluorotoluene	89		44 - 134				11/07/13 10:36	11/15/13 19:36	1
— Г									
Method: 8015B - Diesel Range (Ы	MDI	11		Dremered	Analyzad	
Analyte Diesel Range Organics [C10-C28]	ND	Qualifier		MDL		— D	Prepared 11/12/13 10:22	Analyzed 11/13/13 15:01	Dil Fac
Diesei Range Organics [C10-C26]	ND		0.7		mg/Kg	*	11/12/13 10.22	11/13/13 15.01	I
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	73		60 - 140				11/12/13 10:22	11/13/13 15:01	1
General Chemistry									
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	5.2		1.0		%			11/08/13 14:11	1
Percent Solids	95		1.0		%			11/08/13 14:11	1
General Chemistry - Soluble									
Analyte	Result	Qualifier	RL	мы	Unit	D	Prepared	Analyzed	Dil Fac
Chloride			4.2		mg/Kg			11/19/13 00:49	1
					0 0				
Client Sample ID: SKU936-0	01-02						Lab Samp	le ID: 600-82	260-34
Date Collected: 11/04/13 13:57								Matri	x: Solid
Date Received: 11/07/13 07:01								Percent Soli	ds: 81.1
Method: 8015B - Gasoline Rang	e Organics - (G	C)							
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
WI Gasoline Range Organics	3.3		1.2		mg/Kg	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	11/08/13 12:17	11/12/13 07:50	1
(C6-C10)									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	104		50 - 150				11/08/13 12:17	11/12/13 07:50	1
4-Bromofluorobenzene	93		50 - 150				11/08/13 12:17	11/12/13 07:50	1
Method: 8021B - Volatile Organ	ic Compounde	(GC)							
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025		mg/Kg	— -	11/07/13 10:36	11/15/13 19:58	1
Toluene	ND		0.025		mg/Kg	¢	11/07/13 10:36	11/15/13 19:58	1
					5 5				

TestAmerica Houston

11/15/13 19:58

11/07/13 10:36

₽

0.025

mg/Kg

ND

1

Client: ARCADIS U.S., Inc. Project/Site: HES Transfer Sites, Lea County NM

TestAmerica Job ID: 600-82260-1

Client Sample ID: SKU936-01-02

Date Collected: 11/04/13 13:57 Date Received: 11/07/13 07:01 Lab Sample ID: 600-82260-34 Matrix: Solid Percent Solids: 81.1

> 5 6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Xylenes, Total	ND		0.025		mg/Kg	*	11/07/13 10:36	11/15/13 19:58	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil F
4-Bromofluorobenzene	98		43 - 141				11/07/13 10:36	11/15/13 19:58	
a,a,a-Trifluorotoluene	84		44 - 134				11/07/13 10:36	11/15/13 19:58	
Method: 8015B - Diesel Range C	Drganics (DRO)	(GC)							
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil F
Diesel Range Organics [C10-C28]	ND		10		mg/Kg	<u></u>	11/11/13 09:58	11/12/13 22:14	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil F
o-Terphenyl	69		60 - 140				11/11/13 09:58	11/12/13 22:14	
General Chemistry									
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil F
Percent Moisture	19		1.0		%			11/07/13 13:58	
Percent Solids	81		1.0		%			11/07/13 13:58	
General Chemistry - Soluble									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil F
anaryto									
Chloride	290		4.9		mg/Kg	<u></u>		11/18/13 17:35	
Chloride	290				mg/Kg	<u>\$</u>	Lab Samp		260-3
Chloride	290				mg/Kg	<u>*</u>	Lab Samp	le ID: 600-82	
	290				mg/Kg	<u> </u>	Lab Samp	le ID: 600-82	x: Soli
Chloride lient Sample ID: SKU936-0 ate Collected: 11/04/13 14:00 ate Received: 11/07/13 07:01	 290)1-05	 C)			mg/Kg	<u>~</u>	Lab Samp	le ID: 600-82 Matri	x: Soli
Chloride Ilient Sample ID: SKU936-0 ate Collected: 11/04/13 14:00 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Rang	290 11-05 19 Organics - (G	C) Qualifier		MDL	mg/Kg Unit	D	Lab Samp	le ID: 600-82 Matri	x: Soli ds: 97
Chloride lient Sample ID: SKU936-0 ate Collected: 11/04/13 14:00 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Rang Analyte WI Gasoline Range Organics	290 11-05 19 Organics - (G	-	4.9	MDL				le ID: 600-82 Matri Percent Soli	x: Sol ds: 97
Chloride lient Sample ID: SKU936-0 ate Collected: 11/04/13 14:00 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Rang Analyte WI Gasoline Range Organics (C6-C10)	290 11-05 e Organics - (G Result	-	4.9	MDL	Unit	D	Prepared	le ID: 600-82 Matri Percent Soli Analyzed	x: Sol ds: 97
Chloride lient Sample ID: SKU936-0 ate Collected: 11/04/13 14:00 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Rang Analyte WI Gasoline Range Organics (C6-C10) Surrogate	290 01-05 e Organics - (G Result 2.5	Qualifier	4.9	MDL	Unit	D	Prepared 11/08/13 12:17	le ID: 600-82 Matri Percent Soli Analyzed 11/12/13 08:15	x: Sol ds: 97
Chloride lient Sample ID: SKU936-0 ate Collected: 11/04/13 14:00 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Rang Analyte WI Gasoline Range Organics (C6-C10) Surrogate a,a,a-Trifluorotoluene	290 01-05 e Organics - (G Result 2.5 %Recovery	Qualifier	4.9 	MDL	Unit	D	Prepared 11/08/13 12:17 Prepared	le ID: 600-82 Matri Percent Soli Analyzed 11/12/13 08:15 Analyzed	x: Sol ds: 97
Chloride lient Sample ID: SKU936-0 ate Collected: 11/04/13 14:00 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Rang Analyte WI Gasoline Range Organics (C6-C10) Surrogate a,a,a-Trifluorotoluene 4-Bromofluorobenzene	290 01-05 e Organics - (G Result 2.5 %Recovery 104 94	Qualifier Qualifier	4.9 	MDL	Unit	D	Prepared 11/08/13 12:17 Prepared 11/08/13 12:17	le ID: 600-82 Matri Percent Soli Analyzed 11/12/13 08:15 Analyzed 11/12/13 08:15	x: Sol ds: 97
Chloride lient Sample ID: SKU936-0 ate Collected: 11/04/13 14:00 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Rang Analyte WI Gasoline Range Organics (C6-C10) Surrogate a,a,a-Trifluorotoluene 4-Bromofluorobenzene Method: 8021B - Volatile Organi	290 01-05 e Organics - (G Result 2.5 %Recovery 104 94 ic Compounds (Qualifier Qualifier	4.9 	MDL	Unit mg/Kg	D	Prepared 11/08/13 12:17 Prepared 11/08/13 12:17	le ID: 600-82 Matri Percent Soli Analyzed 11/12/13 08:15 Analyzed 11/12/13 08:15	x: Sol ds: 97 Dil F
Chloride lient Sample ID: SKU936-0 ate Collected: 11/04/13 14:00 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Rang Analyte WI Gasoline Range Organics (C6-C10) Surrogate a,a,a-Trifluorotoluene 4-Bromofluorobenzene Method: 8021B - Volatile Organi Analyte	290 01-05 e Organics - (G Result 2.5 %Recovery 104 94 ic Compounds (Qualifier Qualifier	4.9 RL 1.0 Limits 50 - 150 50 - 150		Unit mg/Kg	<u>D</u>	Prepared 11/08/13 12:17 Prepared 11/08/13 12:17 11/08/13 12:17	le ID: 600-82 Matri Percent Soli 11/12/13 08:15 Analyzed 11/12/13 08:15 11/12/13 08:15	x: Sol ds: 97 Dil F
Chloride lient Sample ID: SKU936-0 ate Collected: 11/04/13 14:00 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Rang Analyte WI Gasoline Range Organics (C6-C10) Surrogate a,a,a-Trifluorotoluene A-Bromofluorobenzene Method: 8021B - Volatile Organi Analyte Benzene	290 01-05 e Organics - (G Result 2.5 %Recovery 104 94 ic Compounds (Result	Qualifier Qualifier	4.9 RL 1.0 Limits 50 - 150 50 - 150 RL		Unit mg/Kg	<u>D</u>	Prepared 11/08/13 12:17 Prepared 11/08/13 12:17 11/08/13 12:17 Prepared	le ID: 600-82 Matri Percent Soli 11/12/13 08:15 Analyzed 11/12/13 08:15 11/12/13 08:15 Analyzed	x: Sol ds: 97 Dil F
Chloride lient Sample ID: SKU936-0 ate Collected: 11/04/13 14:00 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Rang Analyte WI Gasoline Range Organics (C6-C10) Surrogate a,a,a-Trifluorotoluene 4-Bromofluorobenzene Method: 8021B - Volatile Organi Analyte Benzene Foluene	290 01-05 e Organics - (G Result 2.5 %Recovery 104 94 ic Compounds (Result ND	Qualifier Qualifier	4.9 RL 1.0 Limits 50 - 150 50 - 150 RL 0.020		Unit mg/Kg	D	Prepared 11/08/13 12:17 Prepared 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 Prepared 11/07/13 10:36	le ID: 600-82 Matri Percent Soli 11/12/13 08:15 Analyzed 11/12/13 08:15 11/12/13 08:15 11/12/13 08:15 11/12/13 08:15	x: Sol ds: 97 Dil F
Chloride lient Sample ID: SKU936-0 ate Collected: 11/04/13 14:00 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Rang Analyte WI Gasoline Range Organics (C6-C10) Surrogate a,a,a-Trifluorotoluene 4-Bromofluorobenzene Method: 8021B - Volatile Organi Analyte Benzene Toluene Ethylbenzene	290 11-05 e Organics - (G Result 2.5 %Recovery 104 94 ic Compounds (Result ND ND	Qualifier Qualifier	4.9 RL 1.0 Limits 50 - 150 50 - 150 S0 - 150 RL 0.020 0.020		Unit mg/Kg mg/Kg mg/Kg	D 	Prepared 11/08/13 12:17 Prepared 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 11/07/13 10:36 11/07/13 10:36	le ID: 600-82. Matri Percent Soli 11/12/13 08:15 Analyzed 11/12/13 08:15 11/12/13 08:15 11/12/13 08:15 11/12/13 20:20 11/15/13 20:20	x: Sol ds: 97 Dil F
Chloride Ilient Sample ID: SKU936-0 ate Collected: 11/04/13 14:00 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Rang Analyte WI Gasoline Range Organics (C6-C10) Surrogate a,a,a-Trifluorotoluene 4-Bromofluorobenzene Method: 8021B - Volatile Organi Analyte Benzene Toluene Ethylbenzene Xylenes, Total	290 01-05 e Organics - (G Result 2.5 %Recovery 104 94 ic Compounds Result ND ND ND	Qualifier Qualifier GC) Qualifier	4.9 RL 1.0 Limits 50 - 150 50 - 150 RL 0.020 0.020 0.020 0.020		Unit mg/Kg Unit mg/Kg mg/Kg mg/Kg	D	Prepared 11/08/13 12:17 Prepared 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 Prepared 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36	le ID: 600-82 Matri Percent Soli Analyzed 11/12/13 08:15 <i>Analyzed</i> 11/12/13 08:15 11/12/13 08:15 11/12/13 08:15 11/15/13 20:20 11/15/13 20:20 11/15/13 20:20	x: Soli ds: 97 Dil Fi Dil Fi
Chloride lient Sample ID: SKU936-0 ate Collected: 11/04/13 14:00	290 11-05 e Organics - (G Result 2.5 %Recovery 104 94 ic Compounds Result ND ND ND ND ND	Qualifier Qualifier GC) Qualifier	4.9 RL 1.0 Limits 50 - 150 50 - 150 50 - 150 RL 0.020 0.020 0.020 0.020 0.020		Unit mg/Kg Unit mg/Kg mg/Kg mg/Kg	D	Prepared 11/08/13 12:17 Prepared 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 Prepared 11/07/13 10:36 11/07/13 10:36 11/07/13 10:36	le ID: 600-82. Matri Percent Soli 11/12/13 08:15 Analyzed 11/12/13 08:15 11/12/13 08:15 11/12/13 08:15 11/12/13 08:15 11/15/13 20:20 11/15/13 20:20 11/15/13 20:20	x: Soli

Method: 8015B - Diesel Range C	organics (DRO)	(GC)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		8.5		mg/Kg	<u></u>	11/11/13 09:58	11/12/13 22:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	66		60 - 140				11/11/13 09:58	11/12/13 22:47	1

Client: ARCADIS U.S., Inc. Project/Site: HES Transfer Sites, Lea County NM TestAmerica Job ID: 600-82260-1

Client Sample ID: SKU936-0 Date Collected: 11/04/13 14:00	1-05						Lab Samp	le ID: 600-82 Matri	260-3 ix: Soli
Date Received: 11/07/13 07:01									
General Chemistry	Decult	Qualifian	Ы	Ы	11		Drenered	Analyzad	
Analyte		Qualifier	RL	RL	Unit %	D	Prepared	Analyzed	Dil Fa
Percent Moisture	2.3		1.0					11/07/13 13:58	
Percent Solids	98		1.0		%			11/07/13 13:58	
General Chemistry - Soluble									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Chloride	34		4.1		mg/Kg	<u>Å</u>		11/18/13 18:21	
lient Sample ID: SKU936-0	1-10						Lab Samp	le ID: 600-82	260-3
ate Collected: 11/04/13 14:02									ix: Soli
ate Received: 11/07/13 07:01								Percent Soli	ds: 98.
Method: 8015B - Gasoline Range	Organics - (G	C)							
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
WI Gasoline Range Organics	2.5		1.0		mg/Kg	<u></u>	11/08/13 12:17	11/12/13 08:40	
(C6-C10)									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
a,a,a-Trifluorotoluene	104		50 - 150				11/08/13 12:17	11/12/13 08:40	
4-Bromofluorobenzene	93		50 - 150				11/08/13 12:17	11/12/13 08:40	
Method: 8021B - Volatile Organio Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	ND		0.020		mg/Kg	<u></u>	11/07/13 10:36	11/15/13 20:42	
Toluene	ND		0.020		mg/Kg	¢	11/07/13 10:36	11/15/13 20:42	
Ethylbenzene	ND		0.020		mg/Kg	¢	11/07/13 10:36	11/15/13 20:42	
Xylenes, Total	ND		0.020		mg/Kg	¢	11/07/13 10:36	11/15/13 20:42	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene	92		43 - 141				11/07/13 10:36	11/15/13 20:42	
a,a,a-Trifluorotoluene	70		44 - 134				11/07/13 10:36	11/15/13 20:42	
Method: 8015B - Diesel Range O Analyte		(GC) Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Diesel Range Organics [C10-C28]	ND		8.4		mg/Kg	— -	11/11/13 09:58	11/12/13 23:53	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
o-Terphenyl	67		60 - 140				11/11/13 09:58	11/12/13 23:53	
General Chemistry									
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fa
Percent Moisture	1.4		1.0		%			11/07/13 13:58	
Percent Solids	99		1.0		%			11/07/13 13:58	
General Chemistry - Soluble									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Chloride	23		4.1		mg/Kg	— —	· · ·	11/18/13 18:37	

Client: ARCADIS U.S., Inc. Project/Site: HES Transfer Sites, Lea County NM

TestAmerica Job ID: 600-82260-1

Client Sample ID: SKU936-01 ate Collected: 11/04/13 14:04	-15						Lab Samp		ix: Solio
ate Received: 11/07/13 07:01								Percent Soli	ds: 98.4
Method: 8015B - Gasoline Range	Organics - (G	C)							
Analyte	• •	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
WI Gasoline Range Organics (C6-C10)	2.7		1.0		mg/Kg	<u>¤</u>	11/08/13 12:17	11/12/13 09:05	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
a,a,a-Trifluorotoluene	103		50 - 150				11/08/13 12:17	11/12/13 09:05	
4-Bromofluorobenzene	91		50 - 150				11/08/13 12:17	11/12/13 09:05	
Method: 8021B - Volatile Organic	Compounds	(GC)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	ND		0.020		mg/Kg	₩ Å	11/07/13 10:36	11/15/13 21:03	
Toluene	ND		0.020		mg/Kg	₽	11/07/13 10:36	11/15/13 21:03	
Ethylbenzene	ND		0.020		mg/Kg	¢	11/07/13 10:36	11/15/13 21:03	
Xylenes, Total	ND		0.020		mg/Kg	¢	11/07/13 10:36	11/15/13 21:03	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene			43 - 141				11/07/13 10:36	11/15/13 21:03	
a,a,a-Trifluorotoluene	89		44 - 134				11/07/13 10:36	11/15/13 21:03	
Method: 8015B - Diesel Range O	rganics (DRO)	(GC)							
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Diesel Range Organics [C10-C28]	ND		8.4		mg/Kg	<u></u>	11/11/13 09:58	11/13/13 00:26	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
o-Terphenyl	69		60 - 140				11/11/13 09:58	11/13/13 00:26	
General Chemistry									
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fa
Percent Moisture	1.6		1.0		%			11/07/13 13:58	
Percent Solids	98		1.0		%			11/07/13 13:58	
General Chemistry - Soluble									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Chloride	19		4.1		mg/Kg	\\\		11/18/13 18:52	
lient Sample ID: SKU936-01	-20						Lab Samp	le ID: 600-82	260-3
ate Collected: 11/04/13 14:06									x: Soli
ate Received: 11/07/13 07:01								Percent Soli	ds: 98.
Method: 8015B - Gasoline Range	Organics - (G	C)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
WI Gasoline Range Organics (C6-C10)	2.6		1.0		mg/Kg	<u></u>	11/08/13 12:17	11/12/13 09:30	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
a,a,a-Trifluorotoluene	103		50 - 150				11/08/13 12:17	11/12/13 09:30	
4-Bromofluorobenzene	95		50 - 150				11/08/13 12:17	11/12/13 09:30	
Method: 8021B - Volatile Organic	Compounds	(GC)							
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	ND		0.020		mg/Kg		11/07/13 10:36	11/15/13 22:09	
						¢			
Toluene	ND		0.020		mg/Kg	74	11/07/13 10:36	11/15/13 22:09	

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RL

RL

8.4

RL

1.0

1.0

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0.020

Limits

43 - 141

44 - 134

Limits

60 - 140

MDL Unit

MDL Unit

RL Unit

%

%

Unit

mg/Kg

mg/Kg

D

×

D

₽

D

Prepared

11/07/13 10:36

Prepared

11/07/13 10:36

11/07/13 10:36

Prepared

11/11/13 09:58

Prepared 11/11/13 09:58

Prepared

.....

Client: ARCADIS U.S., Inc. Project/Site: HES Transfer Sites, Lea County NM

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Method: 8015B - Diesel Range Organics (DRO) (GC)

Result Qualifier

Qualifier

Qualifier

ND

100

75

ND

65

1.2

99

%Recovery

Result Qualifier

Result Qualifier

Beault Qualifier

%Recovery

Client Sample ID: SKU936-01-20

Date Collected: 11/04/13 14:06

Date Received: 11/07/13 07:01

Diesel Range Organics [C10-C28]

Analyte

Surrogate

Analyte

Surrogate

Analyte

Analyte

o-Terphenyl

General Chemistry

Percent Moisture Percent Solids

Xylenes, Total

4-Bromofluorobenzene

a,a,a-Trifluorotoluene

TestAmerica Job ID: 600-82260-1

Analyzed

11/15/13 22:09

Analyzed

11/15/13 22:09

11/15/13 22:09

Analyzed

Lab Sample ID: 600-82260-38 Matrix: Solid Percent Solids: 98.8 Dil Fac 1 6 Dil Fac 1 1

11/13/13 00:58	1	9
Analyzed	Dil Fac	10
11/13/13 00:58	1	11
Analyzed 11/07/13 13:58	Dil Fac	12
		12 13

Percent Solids: 93.1

Dil Fac

Analyte	Result	Quaimer	RL	MDL	Unit	U	Prepared	Analyzed	DIFac
Chloride	76		8.1		mg/Kg	\$		11/18/13 20:10	2
Client Sample ID: SKU936-01-2	25						Lab Samp	ole ID: 600-82	260-39
Date Collected: 11/04/13 14:08								Matri	x: Solid

Date Received: 11/07/13 07:01

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
WI Gasoline Range Organics (C6-C10)	2.9		1.1		mg/Kg	<u></u>	11/08/13 12:17	11/12/13 09:55	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	102		50 - 150				11/08/13 12:17	11/12/13 09:55	1
4-Bromofluorobenzene	93		50 - 150				11/08/13 12:17	11/12/13 09:55	1
Method: 8021B - Volatile Organ	Result	(GC) Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Benzene		Quanner	0.021		mg/Kg	— -	11/07/13 10:36	11/15/13 22:31	1
Toluene	ND		0.021		mg/Kg	₽	11/07/13 10:36	11/15/13 22:31	1
Ethylbenzene	ND		0.021		mg/Kg	¢	11/07/13 10:36	11/15/13 22:31	1
Xylenes, Total	ND		0.021		mg/Kg	¢	11/07/13 10:36	11/15/13 22:31	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	93		43 - 141				11/07/13 10:36	11/15/13 22:31	1
a,a,a-Trifluorotoluene	67		44 - 134				11/07/13 10:36	11/15/13 22:31	1

	,	()							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		8.9		mg/Kg	<u></u>	11/11/13 09:58	11/13/13 01:31	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	66		60 - 140				11/11/13 09:58	11/13/13 01:31	1

Client: ARCADIS U.S., Inc. Project/Site: HES Transfer Sites, Lea County NM TestAmerica Job ID: 600-82260-1

Client Sample ID: SKU936-0 Date Collected: 11/04/13 14:08 Date Received: 11/07/13 07:01	1-25						Lab Samp	le ID: 600-82 Matri	260-39 x: Solic
General Chemistry Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fa
Percent Moisture	6.9		1.0		%			11/07/13 13:58	
Percent Solids	93		1.0		%			11/07/13 13:58	
General Chemistry - Soluble	Desult	Qualifian	51	MD	11		Durant	A	Dil Fa
Analyte Chloride		Qualifier	RL 8.6	MDL	mg/Kg	— D	Prepared	Analyzed 11/18/13 20:25	
lient Sample ID: SKU936-0	2-02						Lab Samp	le ID: 600-82	260-40
ate Collected: 11/04/13 11:46 ate Received: 11/07/13 07:01									x: Solic
Method: 8015B - Gasoline Range Analyte		<mark>C)</mark> Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
WI Gasoline Range Organics			1.0		mg/Kg	— -	11/08/13 12:17	11/12/13 10:20	
(C6-C10)	0.4		1.0		ing/itg			10.20	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
a,a,a-Trifluorotoluene	104		50 - 150				11/08/13 12:17	11/12/13 10:20	
4-Bromofluorobenzene	92		50 - 150				11/08/13 12:17	11/12/13 10:20	
Method: 8021B - Volatile Organi		GC) Qualifier	DI	MDI	11		Dramanad	Analyzad	
Analyte Benzene	ND	Quaimer		MDL	mg/Kg	— <u>D</u>	Prepared 11/07/13 10:36	Analyzed 11/15/13 22:53	Dil Fa
Toluene	ND		0.020		mg/Kg	₽	11/07/13 10:36	11/15/13 22:53	
Ethylbenzene	ND		0.020		mg/Kg	¢	11/07/13 10:36	11/15/13 22:53	
Xylenes, Total	ND		0.020		mg/Kg	¢	11/07/13 10:36	11/15/13 22:53	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene	108		43 - 141				11/07/13 10:36	11/15/13 22:53	
a,a,a-Trifluorotoluene	80		44 - 134				11/07/13 10:36	11/15/13 22:53	
Method: 8015B - Diesel Range O Analyte		(GC) Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Diesel Range Organics [C10-C28]	- ND		8.4		mg/Kg	— -	11/11/13 09:58	11/13/13 02:04	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
o-Terphenyl	66		60 - 140				11/11/13 09:58	11/13/13 02:04	
General Chemistry		0.115				_	. .	.	
Analyte		Qualifier		RL	Unit	D	Prepared	Analyzed	Dil Fa
Percent Moisture Percent Solids	1.6 98		1.0 1.0		% %			11/07/13 13:58 11/07/13 13:58	
General Chemistry - Soluble									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Chloride	150		4.1		mg/Kg	- \		11/18/13 20:41	

Client: ARCADIS U.S., Inc. Project/Site: HES Transfer Sites, Lea County NM

TestAmerica Job ID: 600-82260-1

Client Sample ID: SKU936-02 Date Collected: 11/04/13 11:48	2-05						Lab Samp	le ID: 600-82 Matri	260-4 1 ix: Solic
Date Received: 11/07/13 07:01								Percent Soli	ds: 98.6
- Method: 8015B - Gasoline Range	Organics - (G	C)							
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
WI Gasoline Range Organics (C6-C10)	2.9		1.0		mg/Kg	<u>¤</u>	11/08/13 12:17	11/12/13 10:45	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
a,a,a-Trifluorotoluene	104		50 - 150				11/08/13 12:17	11/12/13 10:45	
4-Bromofluorobenzene	94		50 - 150				11/08/13 12:17	11/12/13 10:45	
Method: 8021B - Volatile Organic	Compounds	(GC)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	ND		0.020		mg/Kg	₽	11/07/13 16:10	11/16/13 01:48	
Toluene	ND		0.020		mg/Kg	₽	11/07/13 16:10	11/16/13 01:48	
Ethylbenzene	ND		0.020		mg/Kg	¢	11/07/13 16:10	11/16/13 01:48	
Xylenes, Total	ND		0.020		mg/Kg	¢	11/07/13 16:10	11/16/13 01:48	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene	97		43 - 141				11/07/13 16:10	11/16/13 01:48	
a,a,a-Trifluorotoluene	89		44 - 134				11/07/13 16:10	11/16/13 01:48	
Method: 8015B - Diesel Range O	rganics (DRO)	(GC)							
Analyte	Result	Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fa
Diesel Range Organics [C10-C28]	12		8.4		mg/Kg	¢	11/11/13 09:58	11/13/13 02:36	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
o-Terphenyl	293	X	60 - 140				11/11/13 09:58	11/13/13 02:36	
General Chemistry									
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fa
Percent Moisture	1.4		1.0		%			11/07/13 13:58	
Percent Solids	99		1.0		%			11/07/13 13:58	
General Chemistry - Soluble									
Analyte	Result	Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fa
Chloride	23		4.1		mg/Kg	<u>‡</u>		11/18/13 20:56	
lient Sample ID: SKU936-02	2-10						Lab Samp	le ID: 600-82	260-42
Date Collected: 11/04/13 11:50 Date Received: 11/07/13 07:01								Matri Percent Soli	ix: Solid
-	0	0							
Method: 8015B - Gasoline Range Analyte		C) Qualifier	RL	мпл	Unit	D	Prepared	Analyzed	Dil Fa
WI Gasoline Range Organics		adamiei	RL		mg/Kg	— ~	11/08/13 12:17	11/12/13 11:10	
(C6-C10)	2.0		1.0				1100/10 12.17	11/12/10 11.10	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
a,a,a-Trifluorotoluene	102		50 - 150				11/08/13 12:17	11/12/13 11:10	
4-Bromofluorobenzene	91		50 - 150				11/08/13 12:17	11/12/13 11:10	
Method: 8021B - Volatile Organic									
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	ND		0.021		mg/Kg	\$	11/07/13 16:10	11/16/13 02:10	
Toluene	ND		0.021		mg/Kg	¢	11/07/13 16:10	11/16/13 02:10	
Ethylbenzene	ND								

Client: ARCADIS U.S., Inc. Project/Site: HES Transfer Sites, Lea County NM

TestAmerica Job ID: 600-82260-1

Client Sample ID: SKU936-02-10

Date Collected: 11/04/13 11:50 Date Received: 11/07/13 07:01 Lab Sample ID: 600-82260-42 Matrix: Solid Percent Solids: 97.2

> 5 6 7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
(ylenes, Total	ND		0.021		mg/Kg	<u></u>	11/07/13 16:10	11/16/13 02:10	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene	98		43 - 141				11/07/13 16:10	11/16/13 02:10	
a,a,a-Trifluorotoluene	61		44 - 134				11/07/13 16:10	11/16/13 02:10	
Method: 8015B - Diesel Range (
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Diesel Range Organics [C10-C28]	ND		8.5		mg/Kg	\	11/11/13 09:58	11/13/13 03:09	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil F
p-Terphenyl	64		60 - 140				11/11/13 09:58	11/13/13 03:09	
General Chemistry									
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil F
Percent Moisture	2.8		1.0		%			11/07/13 13:58	
Percent Solids	97		1.0		%			11/07/13 13:58	
General Chemistry - Soluble									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil F
Chloride	22		4.1		mg/Kg	<u></u>		11/18/13 21:12	
te Collected: 11/04/13 11:52 te Received: 11/07/13 07:01		<u></u>					Lab Samp	Matri Percent Soli	
ate Collected: 11/04/13 11:52 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Rang	ge Organics - (G			MDI	Unit			Percent Soli	ds: 97
ate Collected: 11/04/13 11:52 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Rang Analyte	ge Organics - (G Result	C) Qualifier	RL	MDL	Unit	D	Prepared	Percent Soli	ds: 97
ate Collected: 11/04/13 11:52 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Rang Analyte WI Gasoline Range Organics	ge Organics - (G		RL 1.0	MDL	Unit mg/Kg	D		Percent Soli	ds: 97
ate Collected: 11/04/13 11:52 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Rang Analyte NI Gasoline Range Organics (C6-C10)	ge Organics - (G Result	Qualifier		MDL			Prepared	Percent Soli	Dil F
lient Sample ID: SKU936-(ate Collected: 11/04/13 11:52 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Rang Analyte NI Gasoline Range Organics (C6-C10) Surrogate a,a,a-Trifluorotoluene	ge Organics - (G Result 2.3	Qualifier	1.0	MDL			Prepared 11/08/13 12:17	Percent Soli Analyzed 11/12/13 12:14	ds: 97 Dil F
ate Collected: 11/04/13 11:52 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte WI Gasoline Range Organics C6-C10) Surrogate a,a,a-Trifluorotoluene	ge Organics - (G Result 2.3 %Recovery	Qualifier	1.0 Limits	MDL			Prepared 11/08/13 12:17 Prepared	Analyzed 11/12/13 12:14 Analyzed	ds: 97 Dil F
ate Collected: 11/04/13 11:52 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte NI Gasoline Range Organics C6-C10) Surrogate a,a,a-Trifluorotoluene 4-Bromofluorobenzene	ge Organics - (G Result 2.3 %Recovery 102 89	Qualifier Qualifier	1.0 Limits 50 - 150	MDL			Prepared 11/08/13 12:17 Prepared 11/08/13 12:17	Analyzed 11/12/13 12:14 Analyzed 11/12/13 12:14	Dil F
Ate Collected: 11/04/13 11:52 Ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte VI Gasoline Range Organics C6-C10) Surrogate A.a.a-Trifluorotoluene H-Bromofluorobenzene Method: 8021B - Volatile Organ	ge Organics - (G Result 2.3 %Recovery 102 89 ic Compounds (Qualifier Qualifier	1.0 Limits 50 - 150				Prepared 11/08/13 12:17 Prepared 11/08/13 12:17	Percent Soli Analyzed 11/12/13 12:14 Analyzed 11/12/13 12:14 11/12/13 12:14	Dil F
Ate Collected: 11/04/13 11:52 Ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte VI Gasoline Range Organics C6-C10) Surrogate A,a,a-Trifluorotoluene H-Bromofluorobenzene Method: 8021B - Volatile Organ Analyte	ge Organics - (G Result 2.3 %Recovery 102 89 ic Compounds (Qualifier Qualifier	1.0 Limits 50 - 150 50 - 150		mg/Kg	<u> </u>	Prepared 11/08/13 12:17 Prepared 11/08/13 12:17 11/08/13 12:17 Prepared	Percent Soli Analyzed 11/12/13 12:14 Analyzed 11/12/13 12:14 11/12/13 12:14 Analyzed	Dil F
Ate Collected: 11/04/13 11:52 Ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte VI Gasoline Range Organics C6-C10) Surrogate A,a,a-Trifluorotoluene H-Bromofluorobenzene Method: 8021B - Volatile Organ Analyte Benzene	ge Organics - (G Result 2.3 %Recovery 102 89 ic Compounds (Result	Qualifier Qualifier	1.0 Limits 50 - 150 50 - 150 RL		Unit mg/Kg	₽	Prepared 11/08/13 12:17 Prepared 11/08/13 12:17 11/08/13 12:17	Percent Soli Analyzed 11/12/13 12:14 Analyzed 11/12/13 12:14 11/12/13 12:14	Dil F
Ate Collected: 11/04/13 11:52 Ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte VI Gasoline Range Organics C6-C10) Surrogate A,a,a-Trifluorotoluene H-Bromofluorobenzene Method: 8021B - Volatile Organ Analyte Benzene Joluene	ge Organics - (G Result 2.3 %Recovery 102 89 ic Compounds (Result ND	Qualifier Qualifier	1.0 Limits 50 - 150 50 - 150 RL 0.020		mg/Kg Unit	<u></u> <u></u>	Prepared 11/08/13 12:17 Prepared 11/08/13 12:17 11/08/13 12:17 Prepared 11/07/13 16:10	Analyzed 11/12/13 12:14 Analyzed 11/12/13 12:14 11/12/13 12:14 11/12/13 12:14 11/12/13 12:14 11/12/13 12:14 11/12/13 12:14 11/12/13 12:14 11/12/13 12:14 11/12/13 12:14 11/12/13 12:14	ds: 97 Dil F Dil I
Ate Collected: 11/04/13 11:52 Ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte VI Gasoline Range Organics C6-C10) Surrogate I.a.a-Trifluorotoluene I-Bromofluorobenzene Method: 8021B - Volatile Organ Analyte Benzene Joluene Ithylbenzene	ge Organics - (G Result 2.3 %Recovery 102 89 iic Compounds (Result ND ND	Qualifier Qualifier	1.0 Limits 50 - 150 50 - 150 RL 0.020 0.020		Unit mg/Kg mg/Kg	D ====================================	Prepared 11/08/13 12:17 Prepared 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 11/07/13 16:10 11/07/13 16:10	Percent Solid Analyzed 11/12/13 12:14 Analyzed 11/12/13 12:14 11/12/13 12:14 11/12/13 12:14 11/16/13 02:32 11/16/13 02:32	<u>Dil F</u>
Ate Collected: 11/04/13 11:52 Ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte WI Gasoline Range Organics C6-C10) Surrogate A,a,a-Trifluorotoluene H-Bromofluorobenzene Method: 8021B - Volatile Organ Analyte Benzene Foluene Ethylbenzene Kylenes, Total	ge Organics - (G Result 2.3 %Recovery 102 89 ic Compounds (Result ND ND ND ND	Qualifier Qualifier (GC) Qualifier	1.0 Limits 50 - 150 50 - 150 RL 0.020 0.020 0.020 0.020		Unit mg/Kg mg/Kg mg/Kg	D = D	Prepared 11/08/13 12:17 Prepared 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 Prepared 11/07/13 16:10 11/07/13 16:10 11/07/13 16:10	Percent Solid Analyzed 11/12/13 12:14 Analyzed 11/12/13 12:14 11/12/13 12:14 Analyzed 11/16/13 02:32 11/16/13 02:32 11/16/13 02:32	Dil F
ate Collected: 11/04/13 11:52 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte NI Gasoline Range Organics C6-C10) Surrogate A,a,a-Trifluorotoluene H-Bromofluorobenzene Method: 8021B - Volatile Organ Analyte Benzene Foluene Ethylbenzene Kylenes, Total	ge Organics - (G Result 2.3 %Recovery 102 89 ic Compounds (Result ND ND ND ND ND	Qualifier Qualifier	1.0 Limits 50 - 150 50 - 150 RL 0.020 0.020 0.020 0.020 Limits		Unit mg/Kg mg/Kg mg/Kg	D = D	Prepared 11/08/13 12:17 Prepared 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 Prepared 11/07/13 16:10 11/07/13 16:10 11/07/13 16:10 11/07/13 16:10 Prepared	Percent Solid Analyzed 11/12/13 12:14 Analyzed 11/12/13 12:14 11/12/13 12:14 Analyzed 11/16/13 02:32 11/16/13 02:32 11/16/13 02:32 11/16/13 02:32 Analyzed	Dil F
Ate Collected: 11/04/13 11:52 Ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte VI Gasoline Range Organics C6-C10) Surrogate A, a, a-Trifluorotoluene I-Bromofluorobenzene Method: 8021B - Volatile Organ Analyte Benzene Toluene Ethylbenzene Kylenes, Total Surrogate I-Bromofluorobenzene	ge Organics - (G Result 2.3 %Recovery 102 89 ic Compounds (Result ND ND ND ND	Qualifier Qualifier (GC) Qualifier	1.0 Limits 50 - 150 50 - 150 RL 0.020 0.020 0.020 0.020		Unit mg/Kg mg/Kg mg/Kg	D = D	Prepared 11/08/13 12:17 Prepared 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 Prepared 11/07/13 16:10 11/07/13 16:10 11/07/13 16:10	Percent Solid Analyzed 11/12/13 12:14 Analyzed 11/12/13 12:14 11/12/13 12:14 Analyzed 11/16/13 02:32 11/16/13 02:32 11/16/13 02:32	Dil F
ate Collected: 11/04/13 11:52 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte NI Gasoline Range Organics C6-C10) Surrogate a,a,a-Trifluorotoluene 4-Bromofluorobenzene Method: 8021B - Volatile Organ Analyte Benzene Foluene Ethylbenzene Kylenes, Total Surrogate 4-Bromofluorobenzene a,a,a-Trifluorotoluene	ge Organics - (G Result 2.3 %Recovery 102 89 ic Compounds (Result ND ND ND ND ND ND ND ND ND 00 89 60	Qualifier Qualifier (GC) Qualifier Qualifier	1.0 Limits 50 - 150 50 - 150 RL 0.020 0.020 0.020 0.020 Limits 43 - 141		Unit mg/Kg mg/Kg mg/Kg	D = D	Prepared 11/08/13 12:17 Prepared 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 Prepared 11/07/13 16:10 11/07/13 16:10 11/07/13 16:10 Prepared 11/07/13 16:10	Percent Solid Analyzed 11/12/13 12:14 Analyzed 11/12/13 12:14 11/12/13 12:14 11/12/13 12:14 Analyzed 11/16/13 02:32 11/16/13 02:32 11/16/13 02:32 11/16/13 02:32 11/16/13 02:32	Dil F
ate Collected: 11/04/13 11:52 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte WI Gasoline Range Organics C6-C10) Surrogate A,a,a-Trifluorotoluene H-Bromofluorobenzene Coluene Ethylbenzene Cylenes, Total Surrogate H-Bromofluorobenzene A,a,a-Trifluorotoluene Method: 8015B - Diesel Range (ge Organics - (G Result 2.3 %Recovery 102 89 ic Compounds (Result ND ND ND ND ND ND ND ND ND ND ND ND ND	Qualifier Qualifier (GC) Qualifier Qualifier (GC)	1.0 Limits 50 - 150 50 - 150 RL 0.020 0.020 0.020 0.020 Limits 43 - 141 44 - 134	MDL	Unit mg/Kg mg/Kg mg/Kg mg/Kg		Prepared 11/08/13 12:17 Prepared 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 Prepared 11/07/13 16:10 11/07/13 16:10 11/07/13 16:10 11/07/13 16:10 11/07/13 16:10	Percent Solid Analyzed 11/12/13 12:14 Analyzed 11/12/13 12:14 11/12/13 12:14 11/12/13 12:14 Analyzed 11/16/13 02:32 11/16/13 02:32 11/16/13 02:32 Analyzed 11/16/13 02:32	ds: 97 Dil F Dil F
ate Collected: 11/04/13 11:52 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Range Analyte NI Gasoline Range Organics C6-C10) Surrogate a,a,a-Trifluorotoluene 4-Bromofluorobenzene Method: 8021B - Volatile Organ Analyte Benzene Foluene Ethylbenzene Kylenes, Total Surrogate 4-Bromofluorobenzene a,a,a-Trifluorotoluene Method: 8015B - Diesel Range (Analyte	ge Organics - (G Result 2.3 %Recovery 102 89 ic Compounds (Result ND ND ND ND ND ND ND ND ND ND ND ND ND	Qualifier Qualifier (GC) Qualifier Qualifier	1.0 Limits 50 - 150 50 - 150 RL 0.020 0.020 0.020 0.020 Limits 43 - 141	MDL	Unit mg/Kg mg/Kg mg/Kg	D = D	Prepared 11/08/13 12:17 Prepared 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 Prepared 11/07/13 16:10 11/07/13 16:10 11/07/13 16:10 Prepared 11/07/13 16:10	Percent Solid Analyzed 11/12/13 12:14 Analyzed 11/12/13 12:14 11/12/13 12:14 11/12/13 12:14 Analyzed 11/16/13 02:32 11/16/13 02:32 11/16/13 02:32 11/16/13 02:32 11/16/13 02:32	x: Sol ds: 97 Dil F Dil F Dil F
ate Collected: 11/04/13 11:52 ate Received: 11/07/13 07:01 Method: 8015B - Gasoline Rang Analyte WI Gasoline Range Organics (C6-C10) Surrogate	ge Organics - (G Result 2.3 %Recovery 102 89 iic Compounds (Result ND ND ND ND ND ND ND ND ND ND ND ND ND	Qualifier Qualifier (GC) Qualifier Qualifier (GC) Qualifier	1.0 Limits 50 - 150 50 - 150 RL 0.020 0.020 0.020 0.020 Limits 43 - 141 44 - 134 RL	MDL	Unit mg/Kg mg/Kg mg/Kg mg/Kg Unit	— D — D ~ ~ ~	Prepared 11/08/13 12:17 Prepared 11/08/13 12:17 11/08/13 12:17 11/08/13 12:17 Prepared 11/07/13 16:10 11/07/13 16:10 11/07/13 16:10 11/07/13 16:10 11/07/13 16:10 Prepared Prepared	Percent Soli Analyzed 11/12/13 12:14 Analyzed 11/12/13 12:14 11/12/13 12:14 11/12/13 12:14 Analyzed 11/16/13 02:32 11/16/13 02:32 11/16/13 02:32 11/16/13 02:32 11/16/13 02:32 Analyzed Analyzed	ds: 97

Client: ARCADIS U.S., Inc. Project/Site: HES Transfer Sites, Lea County NM TestAmerica Job ID: 600-82260-1

Client Sample ID: SKU936-0 Date Collected: 11/04/13 11:52 Date Received: 11/07/13 07:01	2-15						Lab Samp	le ID: 600-82 Matri	260-43 ix: Solio
General Chemistry Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fa
Percent Moisture	2.4		1.0		%			11/07/13 13:58	
Percent Solids	98		1.0		%			11/07/13 13:58	
General Chemistry - Soluble	Desult	Qualifier	51	MDL	11	D	Deserved	Ameliand	D!! 5-
Analyte Chloride	12		RL 4.1		mg/Kg	— ¤	Prepared	Analyzed 11/18/13 21:58	Dil Fa
lient Sample ID: SKU936-0	2-20						Lab Samp	le ID: 600-82	260-4
ate Collected: 11/04/13 11:54 ate Received: 11/07/13 07:01								Matri Percent Soli	ix: Solio ds: 95.
Method: 8015B - Gasoline Range Analyte		<mark>C)</mark> Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
WI Gasoline Range Organics (C6-C10)	2.4		1.0		mg/Kg	— ¤	11/08/13 12:17	11/12/13 12:39	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
a,a,a-Trifluorotoluene	102		50 - 150				11/08/13 12:17	11/12/13 12:39	
4-Bromofluorobenzene	91		50 - 150				11/08/13 12:17	11/12/13 12:39	
Method: 8021B - Volatile Organi									
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fa
Benzene	ND		0.021		mg/Kg	÷.	11/07/13 16:10	11/16/13 02:54	
Toluene	ND		0.021		mg/Kg	¢ ×	11/07/13 16:10	11/16/13 02:54	
Ethylbenzene Xylenes, Total	ND ND		0.021 0.021		mg/Kg mg/Kg	¢	11/07/13 16:10 11/07/13 16:10	11/16/13 02:54 11/16/13 02:54	
Surrogate	%Recovery	Qualifier	Limits		0 0		Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene	- <u></u>		43 - 141				11/07/13 16:10	11/16/13 02:54	
a,a,a-Trifluorotoluene	78		44 - 134				11/07/13 16:10	11/16/13 02:54	
Method: 8015B - Diesel Range O	organics (DRO)	(GC)							
Analyte	Result	Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fa
Diesel Range Organics [C10-C28]	ND		8.7		mg/Kg	÷.	11/11/13 09:58	11/13/13 04:14	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
o-Terphenyl	68		60 - 140				11/11/13 09:58	11/13/13 04:14	
General Chemistry	Docult	Qualifier	RL	ы	Unit	D	Prepared	Analyzed	Dil Fa
Analyte Percent Moisture	Kesuit 4.5	Juannen		KL	0mt %		Fiepaieu	11/07/13 13:58	
Percent Moisture Percent Solids	4.5 96		1.0		%			11/07/13 13:58	
General Chemistry - Soluble									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Chloride	24		4.2		mg/Kg	\ ₽		11/18/13 22:45	

Qualifiers

		•
GC VOA		
Qualifier	Qualifier Description	
X	Surrogate is outside control limits	5
GC Semi V	AC	
Qualifier	Qualifier Description	
х	Surrogate is outside control limits	
*	LCS or LCSD exceeds the control limits	7
General Ch	emistry	
Qualifier	Qualifier Description	8
F	MS/MSD Recovery and/or RPD exceeds the control limits	
		9
Glossary		

Abbreviation	These commonly used abbreviations may or may not be present in this report.	
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis	11
%R	Percent Recovery	
CNF	Contains no Free Liquid	
DER	Duplicate error ratio (normalized absolute difference)	
Dil Fac	Dilution Factor	10
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample	13
DLC	Decision level concentration	
MDA	Minimum detectable activity	
EDL	Estimated Detection Limit	
MDC	Minimum detectable concentration	
MDL	Method Detection Limit	
ML	Minimum Level (Dioxin)	
NC	Not Calculated	
ND	Not detected at the reporting limit (or MDL or EDL if shown)	
PQL	Practical Quantitation Limit	
QC	Quality Control	
RER	Relative error ratio	
RL	Reporting Limit or Requested Limit (Radiochemistry)	
RPD	Relative Percent Difference, a measure of the relative difference between two points	
TEF	Toxicity Equivalent Factor (Dioxin)	
TEQ	Toxicity Equivalent Quotient (Dioxin)	

Method: 8015B - Gasoline Range Organics - (GC)

Prep Type: Total/NA

Matrix: Solid

				Percent Surrogate Recovery (Acceptance
		TFT1	BFB1	
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	
600-82260-12	SKU936-04-20	104	93	
600-82260-12 MS	SKU936-04-20	106	95	
600-82260-12 MSD	SKU936-04-20	108	87	
600-82260-13	SKU936-04-25	104	93	
600-82260-23	SKU936-02-25	104	94	
600-82260-24	SKU936-03-02	104	94	
600-82260-25	SKU936-03-05	104	94	
600-82260-26	SKU936-03-10	104	92	
600-82260-27	SKU936-03-15	104	95	
600-82260-28	SKU936-03-20	104	94	
600-82260-29	SKU936-03-25	104	89	
600-82260-30	SKU936-04-02	104	92	
600-82260-31	SKU936-04-05	104	92	
600-82260-32	SKU936-04-10	105	94	
600-82260-33	SKU936-04-15	105	94	
600-82260-34	SKU936-01-02	104	93	
600-82260-35	SKU936-01-05	104	94	
600-82260-36	SKU936-01-10	104	93	
600-82260-37	SKU936-01-15	103	91	
600-82260-38	SKU936-01-20	103	95	
600-82260-39	SKU936-01-25	102	93	
600-82260-40	SKU936-02-02	104	92	
600-82260-41	SKU936-02-05	104	94	
600-82260-42	SKU936-02-10	102	91	
600-82260-43	SKU936-02-15	102	89	
600-82260-44	SKU936-02-20	102	91	
LCS 600-120604/1-A	Lab Control Sample	103	107	
LCS 600-120606/1-A	Lab Control Sample	103	103	
LCSD 600-120606/8-A	Lab Control Sample Dup	105	109	
MB 600-120604/2-A	Method Blank	102	97	
MB 600-120606/2-A	Method Blank	105	88	
	method Blank	100		

Surrogate Legend

TFT = a,a,a-Trifluorotoluene

BFB = 4-Bromofluorobenzene

Method: 8021B - Volatile Organic Compounds (GC) Matrix: Solid

				Percent Surrogate R	ecovery (Acce
		BFB1	TFT1		
Lab Sample ID	Client Sample ID	(43-141)	(44-134)		
600-82260-12	SKU936-04-20	90	93		
600-82260-12 MS	SKU936-04-20	96	89		
600-82260-12 MSD	SKU936-04-20	102	96		
600-82260-13	SKU936-04-25	85	80		
600-82260-23	SKU936-02-25	57	54		
600-82260-24	SKU936-03-02	91	67		
600-82260-25	SKU936-03-05	100	70		

TestAmerica Houston

Prep Type: Total/NA

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Matrix: Solid

Pron	Type:	Total	Ι/ΝΔ
Fieh	rype.	TOLA	

				Percent Surrogate Recovery (Acceptance Limits)	
		BFB1	TFT1		5
Lab Sample ID	Client Sample ID	(43-141)	(44-134)		J
600-82260-25	SKU936-03-05	58	47		
600-82260-26	SKU936-03-10	112	103		
600-82260-27	SKU936-03-15	92	55		
600-82260-28	SKU936-03-20	113	102		
600-82260-29	SKU936-03-25	175 X	100		
600-82260-30	SKU936-04-02	107	102		8
600-82260-31	SKU936-04-05	97	91		
600-82260-32	SKU936-04-10	59	53		9
600-82260-33	SKU936-04-15	85	89		
600-82260-34	SKU936-01-02	98	84		
600-82260-35	SKU936-01-05	118	96		
600-82260-36	SKU936-01-10	92	70		
600-82260-37	SKU936-01-15	100	89		
600-82260-38	SKU936-01-20	100	75		
600-82260-39	SKU936-01-25	93	67		
600-82260-40	SKU936-02-02	108	80		4.9
600-82260-41	SKU936-02-05	97	89		13
600-82260-42	SKU936-02-10	98	61		
600-82260-43	SKU936-02-15	99	60		
600-82260-44	SKU936-02-20	110	78		
LCS 600-120595/1-A	Lab Control Sample	97	89		
LCS 600-120602/1-A	Lab Control Sample	104	102		
LCS 600-120602/1-A	Lab Control Sample	95	92		
LCSD 600-120602/7-A	Lab Control Sample Dup	103	99		
LCSD 600-120602/7-A	Lab Control Sample Dup	117	99		
MB 600-120595/2-A	Method Blank	99	94		
MB 600-120602/2-A	Method Blank	99	96		
MB 600-120602/2-A	Method Blank	101	96		

Surrogate Legend

BFB = 4-Bromofluorobenzene

TFT = a,a,a-Trifluorotoluene

Method: 8015B - Diesel Range Organics (DRO) (GC) Matrix: Solid

Prep Type: Total/NA

Γ			
		OTPH1	OTPH2
Lab Sample ID	Client Sample ID	(60-140)	(60-140)
600-82260-12	SKU936-04-20		70
600-82260-13	SKU936-04-25		67
600-82260-23	SKU936-02-25	71	
600-82260-24	SKU936-03-02	68	
600-82260-25	SKU936-03-05	74	64
600-82260-25 MS	SKU936-03-05	100	82
600-82260-25 MSD	SKU936-03-05	97	78
600-82260-26	SKU936-03-10		68
600-82260-27	SKU936-03-15		66
600-82260-28	SKU936-03-20		67

Method: 8015B - Diesel Range Organics (DRO) (GC) (Continued)

Matrix: Solid

Prop	Type:	Total	
Fieh	Type.	TULA	

				Percent Surrogate Recovery (Acceptance Limits)	
		OTPH1	OTPH2		5
Lab Sample ID	Client Sample ID	(60-140)	(60-140)		J
600-82260-29	SKU936-03-25		62		
600-82260-29 MS	SKU936-03-25		85		
600-82260-29 MSD	SKU936-03-25		84		
600-82260-30	SKU936-04-02		69		
600-82260-31	SKU936-04-05		70		
600-82260-32	SKU936-04-10		70		8
600-82260-33	SKU936-04-15	73			
600-82260-34	SKU936-01-02		69		9
600-82260-35	SKU936-01-05		66		
600-82260-36	SKU936-01-10		67		
600-82260-37	SKU936-01-15		69		
600-82260-38	SKU936-01-20		65		
600-82260-39	SKU936-01-25		66		
600-82260-40	SKU936-02-02		66		
600-82260-41	SKU936-02-05		293 X		
600-82260-42	SKU936-02-10		64		
600-82260-43	SKU936-02-15		67		
600-82260-44	SKU936-02-20		68		
LCS 600-120105/2-A	Lab Control Sample		96		
LCS 600-120114/2-A	Lab Control Sample	97			
LCS 600-120225/2-A	Lab Control Sample	99	80		
MB 600-120105/1-A	Method Blank		75		
MB 600-120114/1-A	Method Blank	71			
MB 600-120225/1-A	Method Blank		77		
MB 600-120225/1-A	Method Blank	68			
Surrogate Legend					

OTPH = o-Terphenyl

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Method: 8015B - Gasoline Range Organics - (GC)

Lab Sample ID: MB 600-1206	004/ Z- A									client Sa	ample ID:		
Matrix: Solid													otal/NA
Analysis Batch: 120915											Prep	Batch:	120604
		IB MB											
Analyte	Resi		RL		MDL			D		repared	Analy		Dil Fac
WI Gasoline Range Organics	Ν	ID	1.0			mg/Kg	1		11/0	8/13 12:17	11/11/13	23:20	1
(C6-C10)													
	N	1B MB											
Surrogate	%Recove	ry Qualifier	Limits						Р	repared	Analy	zed	Dil Fac
a,a,a-Trifluorotoluene	1	02	50 - 150						11/0	8/13 12:17	11/11/13	3 23:20	5
4-Bromofluorobenzene		97	50 - 150						11/0	8/13 12:17	11/11/13	8 23:20	
_ab Sample ID: LCS 600-120	604/1-A							C	lient	Sample	ID: Lab C	ontrol	Sample
Matrix: Solid											Prep 1	Гуре: Т	otal/NA
Analysis Batch: 120915											Prep	Batch:	120604
			Spike	LCS	LCS						%Rec.		
Analyte			Added	Result	Qual	ifier	Unit		D	%Rec	Limits		
WI Gasoline Range Organics			5.00	5.25			mg/Kg		_	105	49 - 151		
C6-C10)													
	LCS L	cs											
Surrogate	%Recovery Q	ualifier	Limits										
a,a,a-Trifluorotoluene	103		50 - 150										
4-Bromofluorobenzene	107		50 - 150										
ab Cample ID: 000 92200 40										Client Co		CKU02	c 04 00
	2 MS									Client Sa	ample ID:		
Matrix: Solid	2 MS									Client Sa	Prep 1	Гуре: Т	otal/NA
Matrix: Solid		ample	Snike	MS	MS					Client Sa	Prep] Prep	Гуре: Т	otal/NA
Matrix: Solid Analysis Batch: 120915	Sample S		Spike Added	MS	MS	ifier	Unit				Prep 1 Prep %Rec.	Гуре: Т	otal/NA
Matrix: Solid Analysis Batch: 120915 ^{Analyte}	Sample S Result Q		Added	Result		ifier	Unit ma/Ka		D	%Rec	Prep Prep %Rec. Limits	Гуре: Т	otal/NA
Matrix: Solid Analysis Batch: 120915 Analyte WI Gasoline Range Organics	Sample S					ifier	Unit mg/Kg		D		Prep 1 Prep %Rec.	Гуре: Т	otal/NA
Matrix: Solid Analysis Batch: 120915 Analyte WI Gasoline Range Organics	Sample S Result Q 	ualifier	Added	Result		ifier			D	%Rec	Prep Prep %Rec. Limits	Гуре: Т	otal/NA
Matrix: Solid Analysis Batch: 120915 Analyte WI Gasoline Range Organics (C6-C10)	Sample S Result Q 1.8 MS M	ualifier	Added	Result		ifier			D	%Rec	Prep Prep %Rec. Limits	Гуре: Т	otal/NA
Matrix: Solid Analysis Batch: 120915 Analyte WI Gasoline Range Organics (C6-C10) Surrogate	Sample S Result Q 1.8 MS M %Recovery Q	ualifier	Added 5.33	Result		ifier			D	%Rec	Prep Prep %Rec. Limits	Гуре: Т	otal/NA
Matrix: Solid Analysis Batch: 120915 Analyte WI Gasoline Range Organics (C6-C10) Surrogate a,a,a-Trifluorotoluene	Sample S Result Q 1.8 MS M %Recovery Q 106	ualifier	Added 5.33 Limits 50 - 150	Result		ifier			D	%Rec	Prep Prep %Rec. Limits	Гуре: Т	6-04-20 otal/NA 120604
Matrix: Solid Analysis Batch: 120915 Analyte WI Gasoline Range Organics (C6-C10) Surrogate a,a,a-Trifluorotoluene	Sample S Result Q 1.8 MS M %Recovery Q	ualifier	Added 5.33	Result		ifier			D	%Rec	Prep Prep %Rec. Limits	Гуре: Т	otal/NA
Matrix: Solid Analysis Batch: 120915 Analyte WI Gasoline Range Organics (C6-C10) Surrogate a,a,a-Trifluorotoluene 4-Bromofluorobenzene	Sample S Result Q 1.8 MS M %Recovery Q 106 95	ualifier	Added 5.33 Limits 50 - 150	Result		ifier			D x	%Rec 103	Prep 7 Prep %Rec. Limits	Гуре: T Batch:	otal/NA 120604
Matrix: Solid Analysis Batch: 120915 Analyte WI Gasoline Range Organics (C6-C10) Surrogate a,a,a-Trifluorotoluene 4-Bromofluorobenzene Lab Sample ID: 600-82260-12	Sample S Result Q 1.8 MS M %Recovery Q 106 95	ualifier	Added 5.33 Limits 50 - 150	Result		ifier			D x	%Rec 103	Prep 7 Prep %Rec. Limits 50 - 150	Type: T Batch:	otal/NA 120604
Matrix: Solid Analysis Batch: 120915 Analyte WI Gasoline Range Organics (C6-C10) Surrogate a, a, a-Trifluorotoluene 4-Bromofluorobenzene Lab Sample ID: 600-82260-12 Matrix: Solid	Sample S Result Q 1.8 MS M %Recovery Q 106 95	ualifier	Added 5.33 Limits 50 - 150	Result		ifier			D x	%Rec 103	Prep %Rec. Limits 50 - 150	Type: T Batch: SKU93 Type: T	otal/NA 120604
Matrix: Solid Analysis Batch: 120915 Analyte WI Gasoline Range Organics (C6-C10) Surrogate a, a, a-Trifluorotoluene 4-Bromofluorobenzene Lab Sample ID: 600-82260-12 Matrix: Solid	Sample S Result Q 1.8 MS M %Recovery Q 106 95	ualifier	Added 5.33 Limits 50 - 150	Result 7.32					D x	%Rec 103	Prep %Rec. Limits 50 - 150	Type: T Batch: SKU93 Type: T	otal/NA 120604
Matrix: Solid Analysis Batch: 120915 Analyte WI Gasoline Range Organics C6-C10) Surrogate a,a,a-Trifluorotoluene 4-Bromofluorobenzene Lab Sample ID: 600-82260-12 Matrix: Solid Analysis Batch: 120915	Sample S Result Q 1.8 MS M %Recovery Q 106 95 2 MSD	ualifier	Added 5.33 Limits 50 - 150 50 - 150	Result 7.32	Qual				D x	%Rec 103	Prep %Rec. Limits 50 - 150	Type: T Batch: SKU93 Type: T	otal/NA 120604 6-04-20 otal/NA 120604 RPD
Matrix: Solid Analysis Batch: 120915 Analyte MI Gasoline Range Organics (C6-C10) Surrogate a,a,a-Trifluorotoluene 4-Bromofluorobenzene Lab Sample ID: 600-82260-12 Matrix: Solid Analysis Batch: 120915 Analyte MI Gasoline Range Organics	Sample S Result Q 1.8 MS M %Recovery Q 106 95 2 MSD Sample S	ualifier	Added 5.33 <i>Limits</i> 50 - 150 50 - 150 Spike	Result 7.32	Qual		mg/Kg		D x	%Rec 103 Client Sa	Prep %Rec. Limits 50 - 150	SKU93 Fype: T Batch:	otal/NA 120604 6-04-20 otal/NA 120604 RPE Limi
Matrix: Solid Analysis Batch: 120915 Analyte WI Gasoline Range Organics (C6-C10) Surrogate a,a,a-Trifluorotoluene 4-Bromofluorobenzene Lab Sample ID: 600-82260-12 Matrix: Solid Analysis Batch: 120915 Analyte WI Gasoline Range Organics	Sample S Result Q 1.8 MS M %Recovery Q 106 95 2 MSD Sample S Result Q	ualifier	Added 5.33 <i>Limits</i> 50 - 150 50 - 150 Spike Added	Result 7.32 MSD Result	Qual		mg/Kg		D ☆	%Rec 103 Client Sa %Rec	Prep %Rec. Limits 50 - 150 ample ID: Prep %Rec. Limits	SKU93 Sype: T Batch: SKU93 Type: T Batch: RPD	otal/NA 120604 6-04-20 otal/NA 120604 RPE Limi
Matrix: Solid Analysis Batch: 120915 Analyte WI Gasoline Range Organics (C6-C10) Surrogate a, a, a-Trifluorotoluene 4-Bromofluorobenzene Lab Sample ID: 600-82260-12 Matrix: Solid Analysis Batch: 120915 Analyte WI Gasoline Range Organics (C6-C10)	Sample S Result Q 1.8 Q MS M %Recovery Q 106 95 2 MSD Sample S Result Q 1.8 Q	ualifier	Added 5.33 <i>Limits</i> 50 - 150 50 - 150 Spike Added	Result 7.32 MSD Result	Qual		mg/Kg		D ☆	%Rec 103 Client Sa %Rec	Prep %Rec. Limits 50 - 150 ample ID: Prep %Rec. Limits	SKU93 Sype: T Batch: SKU93 Type: T Batch: RPD	otal/NA 120604 6-04-20 otal/NA 120604 RPD Limit
Lab Sample ID: 600-82260-12 Matrix: Solid Analysis Batch: 120915 Analyte WI Gasoline Range Organics (C6-C10) Surrogate a,a,a-Trifluorotoluene 4-Bromofluorobenzene Lab Sample ID: 600-82260-12 Matrix: Solid Analysis Batch: 120915 Analyte WI Gasoline Range Organics (C6-C10) Surrogate a,a,a-Trifluorotoluene	Sample S Result Q 1.8 MS M %Recovery Q 106 95 2 MSD Sample S Result Q 1.8	ualifier	Added 5.33 Limits 50 - 150 50 - 150 Spike Added 5.33	Result 7.32 MSD Result	Qual		mg/Kg		D ☆	%Rec 103 Client Sa %Rec	Prep %Rec. Limits 50 - 150 ample ID: Prep %Rec. Limits	SKU93 Sype: T Batch: SKU93 Type: T Batch: RPD	otal/NA 120604 6-04-20 otal/NA 120604 RPD Limit

QC Sample Results

Method: 8015B - Gasoline Range Organics - (GC) (Continued)

Lab Sample ID: MB 600-1206 Matrix: Solid	10012-A									Sherit Sc	ample ID: Me Prep Typ		
Analysis Batch: 120802											Prep Ba		
Analysis Batch. 120002	м	в мв									гтер Ба		20000
Analyte		It Qualifier	RL		MDL	Unit		D	Р	repared	Analyzed		Dil Fac
WI Gasoline Range Organics (C6-C10)	N	D	1.0			mg/Kg]	_	11/0	9/13 12:36	11/15/13 19:	47 —	1
	М	B MB											
Surrogate	%Recover	ry Qualifier	Limits						Р	repared	Analyzed	l.	Dil Fac
a,a,a-Trifluorotoluene	10	05	50 - 150						11/0	9/13 12:36	11/15/13 19:	47	1
4-Bromofluorobenzene	٤	88	50 - 150						11/0	9/13 12:36	11/15/13 19:	47	1
Lab Sample ID: LCS 600-120 Matrix: Solid	606/1-A							С	lient	Sample	ID: Lab Con Prep Typ		
Analysis Batch: 120802											Prep Ba		
			Spike	LCS	LCS						%Rec.		
Analyte			Added	Result	Qua	lifier	Unit		D	%Rec	Limits		
WI Gasoline Range Organics (C6-C10)			5.00	4.73			mg/Kg			95	49 - 151		
	LCS LC	cs											
Surrogate	%Recovery Q		Limits										
a,a,a-Trifluorotoluene	103		50 - 150										
4-Bromofluorobenzene	103		50 - 150										
Lab Sample ID: LCSD 600-12	20606/8-A						CI	ient	Sam	ple ID: L	ab Control S	Sampl	e Dup
Matrix: Solid											Prep Typ	e: To	tal/NA
Analysis Batch: 120802											Prep Ba	tch: 1	20606
-			Spike	LCSD	LCS	D					%Rec.		RPD
Analyte			Added	Result	Qua	lifier	Unit		D	%Rec	Limits	RPD	Limit
WI Gasoline Range Organics (C6-C10)			5.00	5.31			mg/Kg			106	49 - 151	12	30
	LCSD LC	CSD											
Surrogate	%Recovery Q	ualifier	Limits										
a,a,a-Trifluorotoluene	105		50 - 150										

Method: 8021B - Volatile Organic Compounds (GC)

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4-Bromofluorobenzene

Lab Sample ID: MB 600-120595/ Matrix: Solid Analysis Batch: 121138	2-A						Client Sa	mple ID: Metho Prep Type: T Prep Batch:	otal/NA
	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.020		mg/Kg		11/07/13 10:36	11/15/13 13:26	1
Toluene	ND		0.020		mg/Kg		11/07/13 10:36	11/15/13 13:26	1
Ethylbenzene	ND		0.020		mg/Kg		11/07/13 10:36	11/15/13 13:26	1
Xylenes, Total	ND		0.020		mg/Kg		11/07/13 10:36	11/15/13 13:26	1
	МВ	МВ							
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	99		43 - 141				11/07/13 10:36	11/15/13 13:26	1
a,a,a-Trifluorotoluene	94		44 - 134				11/07/13 10:36	11/15/13 13:26	1

50 - 150

Client Sample ID: SKU936-04-20

Client Sample ID: SKU936-04-20

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Type: Total/NA

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: LCS 600-120595/1-A Matrix: Solid Analysis Batch: 121138	Sniko	105	1.05		Client	Sample	e ID: Lab C Prep Prep
	Spike		LCS		_	~-	%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Benzene	1.00	0.947		mg/Kg		94	69 - 133
Toluene	1.00	0.943		mg/Kg		94	70 - 134
Ethylbenzene	1.00	0.922		mg/Kg		92	71 _ 139
Xylenes, Total	3.01	2.79		mg/Kg		93	70 - 130

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene	97		43 - 141
a,a,a-Trifluorotoluene	89		44 - 134

Lab Sample ID: 600-82260-12 MS Matrix: Solid

Analysis Batch: 121138

Analysis Batch: 121138									Prep	Batch: 1205	595
	Sample	Sample	Spike	MS	MS				%Rec.		
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits		
Benzene	ND		1.06	1.05		mg/Kg	<u> </u>	99	50 _ 150		_
Toluene	ND		1.06	1.05		mg/Kg	⇔	99	50 _ 150		- 1
Ethylbenzene	ND		1.06	0.993		mg/Kg	⇔	93	50 - 150		
Xylenes, Total	ND		3.19	3.00		mg/Kg	¢.	94	50 - 150		

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene	96		43 - 141
a,a,a-Trifluorotoluene	89		44 - 134

Lab Sample ID: 600-82260-12 MSD Matrix: Solid Analysis Batch: 121138

Analysis Batch: 121138									Prep	Batch: 1	20595
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	ND		1.06	1.07		mg/Kg	<u>\$</u>	100	50 - 150	1	20
Toluene	ND		1.06	1.05		mg/Kg	¢	99	50 ₋ 150	0	20
Ethylbenzene	ND		1.06	1.01		mg/Kg	¢	95	50 - 150	1	20
Xylenes, Total	ND		3.19	3.05		mg/Kg	¢	96	50 ₋ 150	2	20

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene	102		43 - 141
a,a,a-Trifluorotoluene	96		44 - 134

Lab Sample ID: MB 600-120602/2-A Matrix: Solid

Analysis Batch: 121186								Prep Batch:	120602
	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.020		mg/Kg		11/07/13 16:10	11/14/13 12:51	1
Toluene	ND		0.020		mg/Kg		11/07/13 16:10	11/14/13 12:51	1
Ethylbenzene	ND		0.020		mg/Kg		11/07/13 16:10	11/14/13 12:51	1
Xylenes, Total	ND		0.020		mg/Kg		11/07/13 16:10	11/14/13 12:51	1

TestAmerica Houston

Prep Type: Total/NA

Lab Sample ID: MB 600-120602/2-A

Lab Sample ID: MB 600-120602/2-A

Matrix: Solid

Surrogate

Analysis Batch: 121186

Analysis Batch: 121143

4-Bromofluorobenzene

a,a,a-Trifluorotoluene

Matrix: Solid

Analyte

Benzene Toluene

Ethylbenzene Xylenes, Total

Surrogate

4-Bromofluorobenzene

a,a,a-Trifluorotoluene

Analysis Batch: 121186

Matrix: Solid

Analyte

Benzene

Toluene

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

MB MB

MB MB Result Qualifier

ND

ND

ND

ND

MB MB

%Recovery Qualifier

99

96

%Recovery Qualifier

101

96

Client Sample ID: Method Blank

Analyzed

Prep Type: Total/NA

Prep Batch: 120602

Dil Fac

1	11/14/13 12:51	3 16:10	11/07				3 - 141
1	11/14/13 12:51	3 16:10	11/07				4 - 134
d Blank	mple ID: Method	ient Sai	c				
otal/NA	Prep Type: T						
120602	Prep Batch:						
Dil Fac	Analyzed	ared	Pre		MDL Unit		RL
1	11/16/13 01:26	3 16:10	11/07		mg/Kg		0.020
1	11/16/13 01:26	3 16:10	11/07		mg/Kg		0.020
1	11/16/13 01:26	3 16:10	11/07		mg/Kg		0.020
1	11/16/13 01:26	3 16:10	11/07		mg/Kg		0.020
Dil Fac	Analyzed	ared	Pre				imits.
1	11/16/13 01:26	3 16:10	11/07				3 - 141
1	11/16/13 01:26	3 16:10	11/07.				4 - 134
	D: Lab Control	ample II	lient S				
otal/NA	Prep Type: T						
120602	Prep Batch:						
	%Rec.					LCS	е
	Limits	6Rec	_ D	Unit	Qualifier	Result	d
	69 ₋ 133	93		mg/Kg		0.937	0
	70 - 134	96		mg/Kg		0.966	0
	71 - 139	93		mg/Kg		0.930	0
	11=100						

Prepared

Ethylbenzene			1.00
Xylenes, Total			3.01
	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene	95		43 - 141
a,a,a-Trifluorotoluene	92		44 - 134

Lab Sample ID: LCS 600-120602/1-A

Lab Sample ID: LCS 600-120602/1-A

Matrix: Solid

Analysis Batch: 121143						Prep B	Batch: 120602	
	Spike	LCS	LCS			%Rec.		
Analyte	Added	Result	Qualifier U	Init D	%Rec	Limits		
Benzene	1.00	1.01	m	ng/Kg	101	69 - 133		
Toluene	1.00	1.03	m	ng/Kg	103	70 - 134		
Ethylbenzene	1.00	0.991	m	ng/Kg	99	71 - 139		
Xylenes, Total	3.01	3.02	m	ng/Kg	100	70 - 130		

QC Sample Results

Limits

Spike

Added

1.00

1.00

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene	104		43 - 141
a,a,a-Trifluorotoluene	102		44 - 134

Client Sample ID: Lab Control Sample

	Prep Type: Total/NA
	Prep Batch: 120602
	%Rec.
С	Limits
1	69 - 133

9

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: LCSD 600-1 Matrix: Solid	120602/7-A					Clie	nt San	ple ID:	Lab Contro	I Sampl	
Analysis Batch: 121186									· · · ·		
Analysis Balch. 121100			Spike	LCSD	LCSD				%Rec.	Batch: 1	RPD
Analyte			Added		Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene			1.00	0.811		mg/Kg		81	69 - 133	17	20
Toluene			1.00	1.05		mg/Kg		105	70 - 134	10	20
Ethylbenzene			1.00	1.05		mg/Kg		104	71 - 139	10	20
Xylenes, Total			3.01	3.35		mg/Kg		111	70 - 130	17	20
	LCSD	LCSD									
Surrogate	%Recovery	Qualifier	Limits								
4-Bromofluorobenzene			43 _ 141								
a,a,a-Trifluorotoluene	99		44 - 134								

Matrix: Solid Prep Type: Total/NA Analysis Batch: 121143 Prep Batch: 120602 Spike LCSD LCSD RPD %Rec. Analyte Added Result Qualifier Unit D %Rec Limits RPD Limit Benzene 1.00 0.978 98 69 - 133 3 20 mg/Kg 20 Toluene 1.00 1.00 mg/Kg 100 70 - 134 3 Ethylbenzene 1.00 0.960 mg/Kg 96 71 - 139 20 3 3.01 Xylenes, Total 2.90 mg/Kg 96 70 - 130 4 20

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene	103		43 - 141
a,a,a-Trifluorotoluene	99		44 - 134

Method: 8015B - Diesel Range Organics (DRO) (GC)

_ Lab Sample ID: MB 600-120105/1-A Matrix: Solid	•										Client Sa	mple ID: Meth Prep Type:	
Analysis Batch: 120365												Prep Batcl	
Analysis Baton. 120000		мв	МВ									Trop Date	
Analyte	Re	sult	Qualifier	RL		MDL	Unit		D	Р	repared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]		ND		8.3			mg/Kg	j	—	11/1	1/13 09:58	11/12/13 17:47	1
		ΜВ	МВ										
Surrogate	%Recov	very	Qualifier	Limits						P	repared	Analyzed	Dil Fac
o-Terphenyl		75		60 - 140						11/1	1/13 09:58	11/12/13 17:47	1
_ Lab Sample ID: LCS 600-120105/2-	Δ								С	lient	Sample	ID: Lab Contro	ol Sample
Matrix: Solid												Prep Type:	
Analysis Batch: 120365												Prep Batcl	
				Spike	LCS	LCS						%Rec.	
Analyte				Added	Result	Qua	lifier	Unit		D	%Rec	Limits	
Diesel Range Organics				33.3	26.7			mg/Kg			80	70 - 130	
[C10-C28]													
	LCS	LCS											
Surrogate %	Recovery	Qual	ifier	Limits									
o-Terphenyl	96			60 - 140									

5 6

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Method: 8015B - Diesel Range Organics (DRO) (GC) (Continued)

Matrix: Solid Analysis Batch: 120365	_	_											Prep Type: Prep Batch	
	Sample		•	Spike			MS						%Rec.	
Analyte	Result	Qua	lifier	Added		Result	Qua	lifier	Unit		D	%Rec	Limits	
Diesel Range Organics [C10-C28]	ND			35.1		30.1			mg/Kg		- \	86	70 - 130	
	MS	MS												
Surrogate	%Recovery	Qua	lifier	Limits										
o-Terphenyl	85			60 - 140										
Lab Sample ID: 600-82260-29 M Matrix: Solid	SD											Client Sa	mple ID: SKU9 Prep Type:	
Analysis Batch: 120365													Prep Batch	
	Sample	Sam	ple	Spike		MSD	MSD)					%Rec.	RPD
Analyte	Result	Qua	lifier	Added		Result	Qua	lifier	Unit		D	%Rec	Limits RF	PD Limit
Diesel Range Organics [C10-C28]	ND			35.1		28.6			mg/Kg		<u> </u>	81	70 - 130	5 30
	MSD	MSE)											
Surrogate	%Recovery	Qua	lifier	Limits										
o-Terphenyl	84			60 - 140										
Lab Sample ID: MB 600-120114/ Matrix: Solid	'1- A											Client Sa	ample ID: Meth Prep Type:	
Analysis Batch: 120353													Prep Batch	
-		MB	MB											
Analyte	R	esult	Qualifier		RL		MDL	Unit		D	P	repared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]		ND			8.3			mg/Kg			11/1	1/13 10:58	11/12/13 17:47	1
		ΜВ	МВ											
Surrogate	%Reco	overy	Qualifier	Limit	ts						P	repared	Analyzed	Dil Fac
o-Terphenyl		71		60 - 1	140						11/1	1/13 10:58	11/12/13 17:47	1
Lab Sample ID: LCS 600-120114	L/2-A									C	lient	Sample	ID: Lab Contro	l Sample
Matrix: Solid													Prep Type:	
Analysis Batch: 120353													Prep Batch	n: 120114
				Spike		LCS	LCS						%Rec.	
Analyte				Added		Result	Qua	lifier	Unit		D	%Rec	Limits	
Diesel Range Organics [C10-C28]				33.3		33.1			mg/Kg			99	70 - 130	
	LCS													
Surrogate	%Recovery	Qua	lifier	Limits										
o-Terphenyl	97			60 - 140										
- Lab Sample ID: MB 600-120225/	'1-A											Client Sa	mple ID: Meth	od Blank
Matrix: Solid													Prep Type:	
Analysis Batch: 120434													Prep Batch	
		ΜВ	МВ											
Analyte	R	esult	Qualifier		RL		MDL	Unit		D	P	repared	Analyzed	Dil Fac
		ND			8.3			mg/Kg		_	11/1	2/13 10:22	11/13/13 12:16	1
Diesel Range Organics [C10-C28]														
Diesel Range Organics [C10-C28]			МВ											
Diesel Range Organics [C10-C28] Surrogate	%Reco	ΜВ	MB Qualifier	Limit	ts						P	repared	Analyzed	Dil Fac

Lab Sample ID: MB 600-120225/1-A

Matrix: Solid

Method: 8015B - Diesel Range Organics (DRO) (GC) (Continued)

Client Sample ID: Method Blank

Prep Type: Total/NA

2 3 4 5 6 7 8

		МВ М	1B										
Surrogate	%Reco		ualifier	Lin	nits				F	Prepared	Analy	zed	Dil Fac
o-Terphenyl		77	uunner		. 140					12/13 10:22	11/13/13		211140
Lab Sample ID: LCS 600-1202	225/2-A								Clien	t Sample	ID: Lab C		
Matrix: Solid												Type: To	
Analysis Batch: 120431				Calles		s i						Batch:	120225
Analyte				Spike Added			Qualifier	Unit	D	%Rec	%Rec. Limits		
Diesel Range Organics				33.3		.2		mg/Kg		67	70 - 130		
[C10-C28]				00.0	22			mg/rtg		01	10 - 100		
Diesel Range Organics				33.3	30	.9		mg/Kg		93	70 - 130		
[C10-C28]													
	105	LCS											
Surrogate	%Recovery		er	Limits									
o-Terphenyl	80			60 - 140	-								
o-Terphenyl	99			60 - 140									
-													
Lab Sample ID: 600-82260-25	MS									Client Sa	ample ID:	SKU93	6-03-0{
Matrix: Solid												Type: To	
Analysis Batch: 120434											Prep	Batch:	120225
-	Sample	Sample	•	Spike	Ν	IS I	MS				%Rec.		
Analyte	Result	Qualifie	er	Added	Res	ult (Qualifier	Unit	D	%Rec	Limits		
Diesel Range Organics	ND			33.8	33	.1		mg/Kg	\$	98	70 - 130		
[C10-C28]													
	MS	MS											
Surrogate	%Recovery	Qualifie	er	Limits									
o-Terphenyl	82			60 - 140	-								
o-Terphenyl	100			60 - 140									
-													
Lab Sample ID: 600-82260-25	MSD									Client Sa	ample ID:	SKU93	6-03-05
Matrix: Solid											Prep T	Type: To	otal/NA
Analysis Batch: 120434											Prep	Batch:	120225
	Sample	Sample)	Spike	MS	SD I	MSD				%Rec.		RPD
Analyte	Result	Qualifie	er	Added	Res	ult (Qualifier	Unit	D	%Rec	Limits	RPD	
Diesel Range Organics	ND			34.0	32	.0		mg/Kg	₩ Å	94	70 - 130	3	30
[C10-C28]													
	MSD	MSD											
Surrogate	%Recovery	Qualifie	er	Limits									
o-Terphenyl	78			60 - 140	-								
o-rerprienyi													

Method: 9056 - Anions, Ion Chromatography

Lab Sample ID: MB 600-120661/21- Matrix: Solid Analysis Batch: 120752	Α						Client Sa	ample ID: Metho Prep Type:	
	МВ	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		4.0		mg/Kg			11/16/13 18:44	1

Method: 9056 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 600-120664/ Matrix: Solid	I-A										Client S	ample ID: Met Prep Typ	
												Flep typ	. Soluble
Analysis Batch: 120752		MB MB											
Analyte	R	esult Qualifier		RL		MDL	Unit		D	P	repared	Analyzed	Dil Fac
Chloride		ND Quanner		4.0			mg/Kg				epareu	11/16/13 21:53	
_		ND		4.0			ing/ity					11/10/13 21.50	
Lab Sample ID: LCS 600-120661	/22-A								Cli	ent	Sample	ID: Lab Contr	ol Sample
Matrix: Solid												Prep Typ	
Analysis Batch: 120752													
,			Spike		LCS	LCS						%Rec.	
Analyte			Added		Result	Quali	fier	Unit		D	%Rec	Limits	
Chloride			200		209			mg/Kg		-	105	90 - 110	
-													
Lab Sample ID: LCS 600-120664	/ 2-A								Clie	ent	Sample	ID: Lab Contr	ol Sample
Matrix: Solid												Prep Typ	e: Soluble
Analysis Batch: 120752													
			Spike		LCS	LCS						%Rec.	
Analyte			Added		Result	Quali	fier	Unit		D	%Rec	Limits	
Chloride			200		209			mg/Kg		_	104	90 - 110	
-													
Lab Sample ID: 600-82260-24 MS	5										Client S	ample ID: SKU	
Matrix: Solid												Prep Typ	e: Soluble
Analysis Batch: 120752													
	-	Sample	Spike		MS	MS						%Rec.	
Analyte		Qualifier	Added		Result	Quali	fier	Unit		D	%Rec	Limits	
Chloride	28		107		129			mg/Kg		¤	94	80 - 120	
-													
Lab Sample ID: 600-82260-24 MS	SD										Client S	ample ID: SKU	
Matrix: Solid												Prep Typ	e: Soluble
Analysis Ratch: 120752												~-	
Analysis Batch: 120752	. .				MSD	MSD	_					%Rec.	RPD
-	Sample	•	Spike										
Analyte	Result	Sample Qualifier	Added		Result	Quali	fier	Unit		D	%Rec		PD Limit
-		•	•		Result 127	Quali	fier	Unit mg/Kg		D ☆	%Rec 92	Limits F 80 - 120	PD Limit 1 20
Analyte Chloride	Result	•	Added			Qualit	fier			æ	92	80 - 120	1 20
Analyte Chloride Lab Sample ID: MB 600-120664/2	Result	•	Added			Qualit	fier			æ	92	80 - 120	1 20
Analyte Chloride Lab Sample ID: MB 600-120664/2 Matrix: Solid	Result	•	Added			Quali	fier			æ	92	80 - 120	1 20
Analyte Chloride Lab Sample ID: MB 600-120664/2	Result	Qualifier	Added			Quali	fier			æ	92	80 - 120	1 20
Analyte Chloride Lab Sample ID: MB 600-120664/2 Matrix: Solid Analysis Batch: 120842	Result 28 21-A	Qualifier	Added	PI	127					<u></u>	92 Client S	80 - 120 ample ID: Meth Prep Typ	nod Blank Soluble
Analyte Chloride Lab Sample ID: MB 600-120664/2 Matrix: Solid Analysis Batch: 120842 Analyte	Result 28 21-A	Qualifier MB MB esult Qualifier	Added	RL	127	MDL	Unit	mg/Kg	D	<u></u>	92	80 - 120 ample ID: Meth Prep Typ Analyzed	1 20 nod Blank e: Soluble Dil Fac
Analyte Chloride Lab Sample ID: MB 600-120664/2 Matrix: Solid Analysis Batch: 120842	Result 28 21-A	Qualifier	Added	RL 4.0	127	MDL		mg/Kg		<u></u>	92 Client S	80 - 120 ample ID: Meth Prep Typ	1 20 nod Blank e: Soluble Dil Fac
Analyte Chloride Lab Sample ID: MB 600-120664/2 Matrix: Solid Analysis Batch: 120842 Analyte Chloride	Result 28 21-A R	Qualifier MB MB esult Qualifier	Added		127	MDL	Unit	mg/Kg		P	92 Client S	80 - 120 ample ID: Mether Prep Typ Analyzed 11/18/13 19:36	1 20 nod Blank e: Soluble Dil Fac
Analyte Chloride Lab Sample ID: MB 600-120664/2 Matrix: Solid Analysis Batch: 120842 Analyte Chloride Lab Sample ID: LCS 600-120664	Result 28 21-A R	Qualifier MB MB esult Qualifier	Added		127	MDL	Unit	mg/Kg		P	92 Client S	80 - 120 ample ID: Mether Prep Typ Analyzed 11/18/13 19:39 ID: Lab Contr	nod Blank e: Soluble Dil Fac
Analyte Chloride Lab Sample ID: MB 600-120664/2 Matrix: Solid Analysis Batch: 120842 Analyte Chloride Lab Sample ID: LCS 600-120664 Matrix: Solid	Result 28 21-A R	Qualifier MB MB esult Qualifier	Added		127	MDL	Unit	mg/Kg		P	92 Client S	80 - 120 ample ID: Mether Prep Typ Analyzed 11/18/13 19:36	nod Blank e: Soluble Dil Fac
Analyte Chloride Lab Sample ID: MB 600-120664/2 Matrix: Solid Analysis Batch: 120842 Analyte Chloride Lab Sample ID: LCS 600-120664	Result 28 21-A R	Qualifier MB MB esult Qualifier	Added 107		127	MDL	Unit	mg/Kg		P	92 Client S	80 - 120 ample ID: Mether Prep Typ Analyzed 11/18/13 19:39 ID: Lab Contr	nod Blank e: Soluble Dil Fac
Analyte Chloride Lab Sample ID: MB 600-120664/2 Matrix: Solid Analysis Batch: 120842 Analyte Chloride Lab Sample ID: LCS 600-120664 Matrix: Solid Analysis Batch: 120842	Result 28 21-A R	Qualifier MB MB esult Qualifier	Added		127	MDL	Unit mg/Kg	mg/Kg		P	92 Client S repared Sample	80 - 120 ample ID: Meth Prep Typ Analyzed 11/18/13 19:39 ID: Lab Contr Prep Typ	nod Blank e: Soluble Dil Fac
Analyte Chloride Lab Sample ID: MB 600-120664/2 Matrix: Solid Analysis Batch: 120842 Analyte Chloride Lab Sample ID: LCS 600-120664 Matrix: Solid	Result 28 21-A R	Qualifier MB MB esult Qualifier	Added 107		127	MDL	Unit mg/Kg	mg/Kg		P	92 Client S	80 - 120 ample ID: Mether Prep Typ Analyzed 11/18/13 19:36 ID: Lab Contr Prep Typ %Rec.	nod Blank e: Soluble Dil Fac
Analyte Chloride Lab Sample ID: MB 600-120664/2 Matrix: Solid Analysis Batch: 120842 Analyte Chloride Lab Sample ID: LCS 600-120664 Matrix: Solid Analysis Batch: 120842 Analyte	Result 28 21-A R	Qualifier MB MB esult Qualifier	Added 107 Spike Added		127 LCS Result	MDL	Unit mg/Kg	Unit		P	92 Client S repared Sample %Rec	80 - 120 ample ID: Meti Prep Typ Analyzed 11/18/13 19:36 ID: Lab Contr Prep Typ %Rec. Limits	nod Blank e: Soluble Dil Fac
Analyte Chloride Lab Sample ID: MB 600-120664/2 Matrix: Solid Analysis Batch: 120842 Analyte Chloride Lab Sample ID: LCS 600-120664 Matrix: Solid Analysis Batch: 120842 Analyte	Result 28 21-A /22-A	Qualifier MB MB esult Qualifier	Added 107 Spike Added		127 LCS Result	MDL	Unit mg/Kg	Unit		Pr ent	92 Client S repared Sample %Rec 98	80 - 120 ample ID: Meti Prep Typ Analyzed 11/18/13 19:36 ID: Lab Contr Prep Typ %Rec. Limits	1 20 nod Blank 2: Soluble
Analyte Chloride Lab Sample ID: MB 600-120664/2 Matrix: Solid Analysis Batch: 120842 Analyte Chloride Lab Sample ID: LCS 600-120664 Matrix: Solid Analysis Batch: 120842 Analyte Chloride	Result 28 21-A /22-A	Qualifier MB MB esult Qualifier	Added 107 Spike Added		127 LCS Result	MDL	Unit mg/Kg	Unit		Pr ent	92 Client S repared Sample %Rec 98	80 - 120 ample ID: Meti Prep Typ Analyzed 11/18/13 19:36 ID: Lab Contr Prep Typ %Rec. Limits 90 - 110	1 20 nod Blank 2: Soluble 2 Dil Fac 1 1 1 20 Sample 2: Soluble 2: Soluble 2: Soluble
Analyte Chloride Lab Sample ID: MB 600-120664/2 Matrix: Solid Analysis Batch: 120842 Analyte Chloride Lab Sample ID: LCS 600-120664 Matrix: Solid Analysis Batch: 120842 Analyte Chloride Lab Sample ID: 600-82260-31 MS Matrix: Solid	Result 28 21-A /22-A	Qualifier MB MB esult Qualifier	Added 107 Spike Added		127 LCS Result	MDL	Unit mg/Kg	Unit		Pr ent	92 Client S repared Sample %Rec 98	80 - 120 ample ID: Meti Prep Typ Analyzed 11/18/13 19:39 ID: Lab Contr Prep Typ %Rec. Limits 90 - 110 ample ID: SKU	1 20 nod Blank 2: Soluble 2 Dil Fac 1 1 1 20 Sample 2: Soluble 2: Soluble 2: Soluble
Analyte Chloride Lab Sample ID: MB 600-120664/2 Matrix: Solid Analysis Batch: 120842 Analyte Chloride Lab Sample ID: LCS 600-120664 Matrix: Solid Analysis Batch: 120842 Analyte Chloride Lab Sample ID: 600-82260-31 MS	Result 28 21-A /22-A	Qualifier MB MB esult Qualifier	Added 107 Spike Added		127 LCS Result	MDL	Unit mg/Kg	Unit		Pr ent	92 Client S repared Sample %Rec 98	80 - 120 ample ID: Meti Prep Typ Analyzed 11/18/13 19:39 ID: Lab Contr Prep Typ %Rec. Limits 90 - 110 ample ID: SKU	1 20 nod Blank 2: Soluble 2 Dil Fac 1 1 1 20 Sample 2: Soluble 2: Soluble 2: Soluble
Analyte Chloride Lab Sample ID: MB 600-120664/2 Matrix: Solid Analysis Batch: 120842 Analyte Chloride Lab Sample ID: LCS 600-120664 Matrix: Solid Analysis Batch: 120842 Analyte Chloride Lab Sample ID: 600-82260-31 MS Matrix: Solid	Result 28 21-A /22-A /22-A	Qualifier	Added 107 Spike Added 200		127 LCS Result 196	MDL LCS Qualit	Unit mg/Kg fier	Unit		Pr ent	92 Client S repared Sample %Rec 98	80 - 120 ample ID: Meth Prep Typ Analyzed 11/18/13 19:38 ID: Lab Contr Prep Typ %Rec. Limits 90 - 110 ample ID: SKU Prep Typ	1 20 nod Blank 2: Soluble 2 Dil Fac 1 1 1 20 Sample 2: Soluble 2: Soluble 2: Soluble

Lab Sample ID: 600-82260-31 MSD								Client S	ample ID:	SKU936-	-04-05
Matrix: Solid									Prep	Type: So	oluble
Analysis Batch: 120842											
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	23		102	104	F	mg/Kg	<u></u>	79	80 - 120	2	20
Lab Sample ID: 600-82260-34 MS								Client S	ample ID:	SKU936	-01-02
Matrix: Solid									Prep	Type: So	oluble
Analysis Batch: 120842											
	Sample	Sample	Spike	MS	MS				%Rec.		
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits		
Chloride	290		123	374	F	mg/Kg	¢	70	80 - 120		
 Lab Sample ID: 600-82260-34 MSD								Client S	ample ID:	SKU936	-01-02
Matrix: Solid										Type: So	
Analysis Batch: 120842											
-	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	290		123	379	F	mg/Kg	<u></u>	74	80 - 120	1	20
 Lab Sample ID: 600-82260-42 MS								Client S	ample ID:	SKU936	-02-10
Matrix: Solid									Prep	Type: So	oluble
Analysis Batch: 120842											
-	Sample	Sample	Spike	MS	MS				%Rec.		
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits		
Chloride	22		103	107		mg/Kg	<u></u>	83	80 - 120		
								Client S	ample ID:	SKU936	-02-10
Matrix: Solid										Type: So	
Analysis Batch: 120842											
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte		Qualifier	Added		Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	22		103	109		mg/Kg	¢	84	80 - 120	2	20

Method: Moisture - Percent Moisture

Lab Sample ID: 600-8226 Matrix: Solid	0-24 DU					Client Sa	mple ID: SKU936 Prep Type: To	
Analysis Batch: 119895								
	Sample	Sample	DU	DU				RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limit
Percent Moisture	6.9		7.0		%		1	20
Percent Solids	93		93		%		0.09	20
- Lab Sample ID: 600-8226	0-38 DU					Client Sa	mple ID: SKU936	-01-20
Matrix: Solid							Prep Type: To	tal/NA
Analysis Batch: 119895								
	Sample	Sample	DU	DU				RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limit
Percent Moisture	1.2		1.0		%		11	20
Percent Solids	99		99		%		0.1	20

Method: Moisture - Percent Moisture (Continued)

Lab Sample ID: 600-82260-33 Matrix: Solid Analysis Batch: 120024	DU					Client	Sample ID: SKU936 Prep Type: Tot	
	Sample	Sample	DU	DU				RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limit
Percent Moisture	5.2		4.6		%		12	20
Percent Solids	95		95		%		0.6	20

GC VOA

Prep Batch: 120595

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-82260-12	SKU936-04-20	Total/NA	Solid	5030B	
600-82260-12 MS	SKU936-04-20	Total/NA	Solid	5030B	
600-82260-12 MSD	SKU936-04-20	Total/NA	Solid	5030B	
600-82260-13	SKU936-04-25	Total/NA	Solid	5030B	
600-82260-23	SKU936-02-25	Total/NA	Solid	5030B	
600-82260-24	SKU936-03-02	Total/NA	Solid	5030B	
600-82260-25	SKU936-03-05	Total/NA	Solid	5030B	
600-82260-26	SKU936-03-10	Total/NA	Solid	5030B	
600-82260-27	SKU936-03-15	Total/NA	Solid	5030B	
600-82260-29	SKU936-03-25	Total/NA	Solid	5030B	
600-82260-30	SKU936-04-02	Total/NA	Solid	5030B	
600-82260-31	SKU936-04-05	Total/NA	Solid	5030B	
600-82260-32	SKU936-04-10	Total/NA	Solid	5030B	
600-82260-33	SKU936-04-15	Total/NA	Solid	5030B	
600-82260-34	SKU936-01-02	Total/NA	Solid	5030B	
600-82260-35	SKU936-01-05	Total/NA	Solid	5030B	
600-82260-36	SKU936-01-10	Total/NA	Solid	5030B	
600-82260-37	SKU936-01-15	Total/NA	Solid	5030B	
600-82260-38	SKU936-01-20	Total/NA	Solid	5030B	
600-82260-39	SKU936-01-25	Total/NA	Solid	5030B	
600-82260-40	SKU936-02-02	Total/NA	Solid	5030B	
LCS 600-120595/1-A	Lab Control Sample	Total/NA	Solid	5030B	
MB 600-120595/2-A	Method Blank	Total/NA	Solid	5030B	

Prep Batch: 120602

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
600-82260-28	SKU936-03-20	Total/NA	Solid	5030B	
600-82260-41	SKU936-02-05	Total/NA	Solid	5030B	
600-82260-42	SKU936-02-10	Total/NA	Solid	5030B	
600-82260-43	SKU936-02-15	Total/NA	Solid	5030B	
600-82260-44	SKU936-02-20	Total/NA	Solid	5030B	
LCS 600-120602/1-A	Lab Control Sample	Total/NA	Solid	5030B	
LCSD 600-120602/7-A	Lab Control Sample Dup	Total/NA	Solid	5030B	
MB 600-120602/2-A	Method Blank	Total/NA	Solid	5030B	

Prep Batch: 120604

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
600-82260-12	SKU936-04-20	Total/NA	Solid	5030B	
600-82260-12 MS	SKU936-04-20	Total/NA	Solid	5030B	
600-82260-12 MSD	SKU936-04-20	Total/NA	Solid	5030B	
600-82260-13	SKU936-04-25	Total/NA	Solid	5030B	
600-82260-23	SKU936-02-25	Total/NA	Solid	5030B	
600-82260-24	SKU936-03-02	Total/NA	Solid	5030B	
600-82260-25	SKU936-03-05	Total/NA	Solid	5030B	
600-82260-26	SKU936-03-10	Total/NA	Solid	5030B	
600-82260-27	SKU936-03-15	Total/NA	Solid	5030B	
600-82260-28	SKU936-03-20	Total/NA	Solid	5030B	
600-82260-29	SKU936-03-25	Total/NA	Solid	5030B	
600-82260-34	SKU936-01-02	Total/NA	Solid	5030B	
600-82260-35	SKU936-01-05	Total/NA	Solid	5030B	
600-82260-36	SKU936-01-10	Total/NA	Solid	5030B	

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GC VOA (Continued)

Prep Batch: 120604 (Continued)

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
600-82260-37	SKU936-01-15	Total/NA	Solid	5030B	
600-82260-38	SKU936-01-20	Total/NA	Solid	5030B	
600-82260-39	SKU936-01-25	Total/NA	Solid	5030B	
600-82260-40	SKU936-02-02	Total/NA	Solid	5030B	
600-82260-41	SKU936-02-05	Total/NA	Solid	5030B	
600-82260-42	SKU936-02-10	Total/NA	Solid	5030B	
600-82260-43	SKU936-02-15	Total/NA	Solid	5030B	
600-82260-44	SKU936-02-20	Total/NA	Solid	5030B	
LCS 600-120604/1-A	Lab Control Sample	Total/NA	Solid	5030B	
MB 600-120604/2-A	Method Blank	Total/NA	Solid	5030B	

Prep Batch: 120606

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-82260-30	SKU936-04-02	Total/NA	Solid	5030B	
600-82260-31	SKU936-04-05	Total/NA	Solid	5030B	
600-82260-32	SKU936-04-10	Total/NA	Solid	5030B	
600-82260-33	SKU936-04-15	Total/NA	Solid	5030B	
LCS 600-120606/1-A	Lab Control Sample	Total/NA	Solid	5030B	
LCSD 600-120606/8-A	Lab Control Sample Dup	Total/NA	Solid	5030B	
MB 600-120606/2-A	Method Blank	Total/NA	Solid	5030B	

Analysis Batch: 120802

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-82260-30	SKU936-04-02	Total/NA	Solid	8015B	120606
600-82260-31	SKU936-04-05	Total/NA	Solid	8015B	120606
600-82260-32	SKU936-04-10	Total/NA	Solid	8015B	120606
600-82260-33	SKU936-04-15	Total/NA	Solid	8015B	120606
LCS 600-120606/1-A	Lab Control Sample	Total/NA	Solid	8015B	120606
LCSD 600-120606/8-A	Lab Control Sample Dup	Total/NA	Solid	8015B	120606
MB 600-120606/2-A	Method Blank	Total/NA	Solid	8015B	120606

Analysis Batch: 120915

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-82260-12	SKU936-04-20	Total/NA	Solid	8015B	120604
600-82260-12 MS	SKU936-04-20	Total/NA	Solid	8015B	120604
600-82260-12 MSD	SKU936-04-20	Total/NA	Solid	8015B	120604
600-82260-13	SKU936-04-25	Total/NA	Solid	8015B	120604
600-82260-23	SKU936-02-25	Total/NA	Solid	8015B	120604
600-82260-24	SKU936-03-02	Total/NA	Solid	8015B	120604
600-82260-25	SKU936-03-05	Total/NA	Solid	8015B	120604
600-82260-26	SKU936-03-10	Total/NA	Solid	8015B	120604
600-82260-27	SKU936-03-15	Total/NA	Solid	8015B	120604
600-82260-28	SKU936-03-20	Total/NA	Solid	8015B	120604
600-82260-29	SKU936-03-25	Total/NA	Solid	8015B	120604
600-82260-34	SKU936-01-02	Total/NA	Solid	8015B	120604
600-82260-35	SKU936-01-05	Total/NA	Solid	8015B	120604
600-82260-36	SKU936-01-10	Total/NA	Solid	8015B	120604
600-82260-37	SKU936-01-15	Total/NA	Solid	8015B	120604
600-82260-38	SKU936-01-20	Total/NA	Solid	8015B	120604
600-82260-39	SKU936-01-25	Total/NA	Solid	8015B	120604
600-82260-40	SKU936-02-02	Total/NA	Solid	8015B	120604

Prep Type

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

Matrix

Solid

Solid

Solid

Solid

Solid

Solid

Client: ARCADIS U.S., Inc. Project/Site: HES Transfer Sites, Lea County NM

Client Sample ID

SKU936-02-05

SKU936-02-10

SKU936-02-15

SKU936-02-20

Method Blank

Lab Control Sample

GC VOA (Continued)

Lab Sample ID

600-82260-41

600-82260-42

600-82260-43

600-82260-44

LCS 600-120604/1-A

MB 600-120604/2-A

Analysis Batch: 120915 (Continued)

Method

8015B

8015B

8015B

8015B

8015B

8015B

Method

8021B

Method

8021B

8021B

8021B

8021B

8021B

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Method

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Prep Batch

120604

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120604

Prep Batch

120595

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120595

120595

120595

120595

120595

120595

120595

Prep Batch

120602

120602

120602

120602

120602

120602

120602

Prep Batch

120595

120602

120602

120602

120602

8021B	120595	
8021B	120595	
8021B	120595	
8021B	120595	
8021B	120595	13
8021B	120595	

Lab Sample ID	Client Sample ID	Prep Type	Matrix
600-82260-12	SKU936-04-20	Total/NA	Solid
600-82260-12 MS	SKU936-04-20	Total/NA	Solid
600-82260-12 MSD	SKU936-04-20	Total/NA	Solid
600-82260-13	SKU936-04-25	Total/NA	Solid
600-82260-23	SKU936-02-25	Total/NA	Solid
600-82260-24	SKU936-03-02	Total/NA	Solid
600-82260-25	SKU936-03-05	Total/NA	Solid
600-82260-25	SKU936-03-05	Total/NA	Solid
600-82260-27	SKU936-03-15	Total/NA	Solid
600-82260-29	SKU936-03-25	Total/NA	Solid
600-82260-30	SKU936-04-02	Total/NA	Solid
600-82260-31	SKU936-04-05	Total/NA	Solid
600-82260-32	SKU936-04-10	Total/NA	Solid
600-82260-33	SKU936-04-15	Total/NA	Solid
600-82260-34	SKU936-01-02	Total/NA	Solid
600-82260-35	SKU936-01-05	Total/NA	Solid
600-82260-36	SKU936-01-10	Total/NA	Solid
600-82260-37	SKU936-01-15	Total/NA	Solid
600-82260-38	SKU936-01-20	Total/NA	Solid
600-82260-39	SKU936-01-25	Total/NA	Solid
600-82260-40	SKU936-02-02	Total/NA	Solid
LCS 600-120595/1-A	Lab Control Sample	Total/NA	Solid
MB 600-120595/2-A	Method Blank	Total/NA	Solid
nalysis Batch: 121143	}		
Lab Sample ID	Client Sample ID	Prep Type	Matri
600-82260-41	SKU936-02-05	Total/NA	Solid
600-82260-42	SKU936-02-10	Total/NA	Solid
600-82260-43	SKU936-02-15	Total/NA	Solid
600-82260-44	SKU936-02-20	Total/NA	Solid
LCS 600-120602/1-A	Lab Control Sample	Total/NA	Solid
LCSD 600-120602/7-A	Lab Control Sample Dup	Total/NA	Solid
MB 600-120602/2-A	Method Blank	Total/NA	Solid
nalysis Batch: 121186	5		
Lab Sample ID	Client Sample ID	Prep Type	Matri
600-82260-26	SKU936-03-10	Total/NA	Solid
600-82260-28	SKU936-03-20	Total/NA	Solid
LCS 600-120602/1-A	Lab Control Sample	Total/NA	Solid
LCSD 600-120602/7-A	Lab Control Sample Dup	Total/NA	Solid
MB 600-120602/2-A	Method Blank	Total/NA	Solid

GC Semi VOA

Prep Batch: 120105

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-82260-12	SKU936-04-20	Total/NA	Solid	3550B	
600-82260-13	SKU936-04-25	Total/NA	Solid	3550B	
600-82260-26	SKU936-03-10	Total/NA	Solid	3550B	
600-82260-27	SKU936-03-15	Total/NA	Solid	3550B	
600-82260-28	SKU936-03-20	Total/NA	Solid	3550B	
600-82260-29	SKU936-03-25	Total/NA	Solid	3550B	
600-82260-29 MS	SKU936-03-25	Total/NA	Solid	3550B	
600-82260-29 MSD	SKU936-03-25	Total/NA	Solid	3550B	
600-82260-30	SKU936-04-02	Total/NA	Solid	3550B	
600-82260-31	SKU936-04-05	Total/NA	Solid	3550B	
600-82260-32	SKU936-04-10	Total/NA	Solid	3550B	
600-82260-34	SKU936-01-02	Total/NA	Solid	3550B	
600-82260-35	SKU936-01-05	Total/NA	Solid	3550B	
600-82260-36	SKU936-01-10	Total/NA	Solid	3550B	
600-82260-37	SKU936-01-15	Total/NA	Solid	3550B	
600-82260-38	SKU936-01-20	Total/NA	Solid	3550B	
600-82260-39	SKU936-01-25	Total/NA	Solid	3550B	
600-82260-40	SKU936-02-02	Total/NA	Solid	3550B	
600-82260-41	SKU936-02-05	Total/NA	Solid	3550B	
600-82260-42	SKU936-02-10	Total/NA	Solid	3550B	
600-82260-43	SKU936-02-15	Total/NA	Solid	3550B	
600-82260-44	SKU936-02-20	Total/NA	Solid	3550B	
LCS 600-120105/2-A	Lab Control Sample	Total/NA	Solid	3550B	
MB 600-120105/1-A	Method Blank	Total/NA	Solid	3550B	
rep Batch: 120114					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batc
600-82260-23	SKU936-02-25	Total/NA	Solid	3550B	
600-82260-24	SKU936-03-02	Total/NA	Solid	3550B	
_CS 600-120114/2-A	Lab Control Sample	Total/NA	Solid	3550B	
MB 600-120114/1-A	Method Blank	Total/NA	Solid	3550B	
rep Batch: 120225					
Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batc
600-82260-25	SKU936-03-05	Total/NA	Solid	3550B	
600-82260-25 MS	SKU936-03-05	Total/NA	Solid	3550B	
600-82260-25 MSD	SKU936-03-05	Total/NA	Solid	3550B	

Analysis Batch: 120353

SKU936-04-15

Method Blank

Lab Control Sample

600-82260-33

LCS 600-120225/2-A

MB 600-120225/1-A

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-82260-23	SKU936-02-25	Total/NA	Solid	8015B	120114
600-82260-24	SKU936-03-02	Total/NA	Solid	8015B	120114
LCS 600-120114/2-A	Lab Control Sample	Total/NA	Solid	8015B	120114
MB 600-120114/1-A	Method Blank	Total/NA	Solid	8015B	120114

Total/NA

Total/NA

Total/NA

Solid

Solid

Solid

Analysis Batch: 120365

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-82260-12	SKU936-04-20	Total/NA	Solid	8015B	120105

TestAmerica Houston

3550B

3550B

3550B
3 4 5 6 7 8 10

Analysis Batch: 120365 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-82260-13	SKU936-04-25	Total/NA	Solid	8015B	120105
600-82260-26	SKU936-03-10	Total/NA	Solid	8015B	120105
600-82260-27	SKU936-03-15	Total/NA	Solid	8015B	120105
600-82260-28	SKU936-03-20	Total/NA	Solid	8015B	120105
600-82260-29	SKU936-03-25	Total/NA	Solid	8015B	120105
600-82260-29 MS	SKU936-03-25	Total/NA	Solid	8015B	120105
600-82260-29 MSD	SKU936-03-25	Total/NA	Solid	8015B	120105
600-82260-30	SKU936-04-02	Total/NA	Solid	8015B	120105
600-82260-31	SKU936-04-05	Total/NA	Solid	8015B	120105
600-82260-32	SKU936-04-10	Total/NA	Solid	8015B	12010
600-82260-34	SKU936-01-02	Total/NA	Solid	8015B	12010
600-82260-35	SKU936-01-05	Total/NA	Solid	8015B	12010
600-82260-36	SKU936-01-10	Total/NA	Solid	8015B	12010
600-82260-37	SKU936-01-15	Total/NA	Solid	8015B	12010
600-82260-38	SKU936-01-20	Total/NA	Solid	8015B	12010
600-82260-39	SKU936-01-25	Total/NA	Solid	8015B	12010
600-82260-40	SKU936-02-02	Total/NA	Solid	8015B	12010
600-82260-41	SKU936-02-05	Total/NA	Solid	8015B	12010
600-82260-42	SKU936-02-10	Total/NA	Solid	8015B	12010
600-82260-43	SKU936-02-15	Total/NA	Solid	8015B	12010
600-82260-44	SKU936-02-20	Total/NA	Solid	8015B	12010
CS 600-120105/2-A	Lab Control Sample	Total/NA	Solid	8015B	12010
VB 600-120105/1-A	Method Blank	Total/NA	Solid	8015B	12010

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
600-82260-25	SKU936-03-05	Total/NA	Solid	8015B	120225
600-82260-25 MS	SKU936-03-05	Total/NA	Solid	8015B	120225
600-82260-25 MSD	SKU936-03-05	Total/NA	Solid	8015B	120225
LCS 600-120225/2-A	Lab Control Sample	Total/NA	Solid	8015B	120225
MB 600-120225/1-A	Method Blank	Total/NA	Solid	8015B	120225

Analysis Batch: 120434

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
600-82260-25	SKU936-03-05	Total/NA	Solid	8015B	120225
600-82260-25 MS	SKU936-03-05	Total/NA	Solid	8015B	120225
600-82260-25 MSD	SKU936-03-05	Total/NA	Solid	8015B	120225
600-82260-33	SKU936-04-15	Total/NA	Solid	8015B	120225
LCS 600-120225/2-A	Lab Control Sample	Total/NA	Solid	8015B	120225
MB 600-120225/1-A	Method Blank	Total/NA	Solid	8015B	120225

General Chemistry

Analysis Batch: 119895

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-82260-23	SKU936-02-25	Total/NA	Solid	Moisture	
600-82260-24	SKU936-03-02	Total/NA	Solid	Moisture	
600-82260-24 DU	SKU936-03-02	Total/NA	Solid	Moisture	
600-82260-25	SKU936-03-05	Total/NA	Solid	Moisture	
600-82260-26	SKU936-03-10	Total/NA	Solid	Moisture	

General Chemistry (Continued)

Analysis Batch: 119895 (Continued)

_ab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batc
600-82260-27	SKU936-03-15	Total/NA	Solid	Moisture	
00-82260-28	SKU936-03-20	Total/NA	Solid	Moisture	
600-82260-29	SKU936-03-25	Total/NA	Solid	Moisture	
600-82260-34	SKU936-01-02	Total/NA	Solid	Moisture	
600-82260-35	SKU936-01-05	Total/NA	Solid	Moisture	
600-82260-36	SKU936-01-10	Total/NA	Solid	Moisture	
600-82260-37	SKU936-01-15	Total/NA	Solid	Moisture	
600-82260-38	SKU936-01-20	Total/NA	Solid	Moisture	
600-82260-38 DU	SKU936-01-20	Total/NA	Solid	Moisture	
600-82260-39	SKU936-01-25	Total/NA	Solid	Moisture	
600-82260-40	SKU936-02-02	Total/NA	Solid	Moisture	
00-82260-41	SKU936-02-05	Total/NA	Solid	Moisture	
600-82260-42	SKU936-02-10	Total/NA	Solid	Moisture	
600-82260-43	SKU936-02-15	Total/NA	Solid	Moisture	
600-82260-44	SKU936-02-20	Total/NA	Solid	Moisture	
nalysis Batch: 120024	4				
_ab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Bato
00-82260-12	SKU936-04-20	Total/NA	Solid	Moisture	
00-82260-13	SKU936-04-25	Total/NA	Solid	Moisture	
00-82260-30	SKU936-04-02	Total/NA	Solid	Moisture	
00-82260-31	SKU936-04-05	Total/NA	Solid	Moisture	
00-82260-32	SKU936-04-10	Total/NA	Solid	Moisture	
	0//1000 04 45	T-+-1/010	Calid	Moisture	
600-82260-33	SKU930-04-15	I Otal/INA	5010	woisture	
600-82260-33 600-82260-33 DU	SKU936-04-15 SKU936-04-15	Total/NA Total/NA	Solid Solid	Moisture	
600-82260-33 DU each Batch: 120661	SKU936-04-15	Total/NA			Prep Bato
600-82260-33 DU			Solid	Moisture	Prep Bate
000-82260-33 DU each Batch: 120661 .ab Sample ID	SKU936-04-15 Client Sample ID	Total/NA Prep Type	Solid Matrix	Moisture Method	Prep Bate
500-82260-33 DU each Batch: 120661 Lab Sample ID 500-82260-23	SKU936-04-15 Client Sample ID SKU936-02-25	Total/NA Prep Type Soluble	Solid Matrix Solid	Moisture Method DI Leach	Prep Bate
600-82260-33 DU each Batch: 120661 Lab Sample ID 500-82260-23 .CS 600-120661/22-A	SKU936-04-15 Client Sample ID SKU936-02-25 Lab Control Sample	Total/NA Prep Type Soluble Soluble	Solid Matrix Solid Solid	Moisture Method DI Leach DI Leach	Prep Bato
00-82260-33 DU ach Batch: 120661 ab Sample ID 00-82260-23 CS 600-120661/22-A /B 600-120661/21-A bach Batch: 120664	SKU936-04-15 Client Sample ID SKU936-02-25 Lab Control Sample	Total/NA Prep Type Soluble Soluble	Solid Matrix Solid Solid	Moisture Method DI Leach DI Leach	
00-82260-33 DU ach Batch: 120661 ab Sample ID 00-82260-23 CS 600-120661/22-A /B 600-120661/21-A ach Batch: 120664 ab Sample ID	SKU936-04-15 Client Sample ID SKU936-02-25 Lab Control Sample Method Blank	Total/NA Prep Type Soluble Soluble Soluble	Solid Matrix Solid Solid Solid	Moisture Method DI Leach DI Leach DI Leach	
00-82260-33 DU ach Batch: 120661 ab Sample ID 00-82260-23 CS 600-120661/22-A //B 600-120661/21-A ach Batch: 120664 ab Sample ID 00-82260-12	SKU936-04-15 Client Sample ID SKU936-02-25 Lab Control Sample Method Blank Client Sample ID	Total/NA Prep Type Soluble Soluble Prep Type Prep Type	Solid Matrix Solid Solid Solid Solid Matrix	Moisture Method DI Leach DI Leach DI Leach Method	
ach Batch: 120661 ach Batch: 120661 ab Sample ID 100-82260-23 .CS 600-120661/22-A AB 600-120661/21-A ach Batch: 120664 ab Sample ID 100-82260-12 100-82260-13	SKU936-04-15 Client Sample ID SKU936-02-25 Lab Control Sample Method Blank Client Sample ID SKU936-04-20	Total/NA Prep Type Soluble Soluble Prep Type Soluble Soluble Soluble Soluble Soluble Soluble Soluble Soluble	Solid Matrix Solid Solid Solid Solid Solid Solid Solid Solid	Moisture Method DI Leach DI Leach DI Leach Method DI Leach	
S00-82260-33 DU each Batch: 120661 Lab Sample ID S00-82260-23 .CS 600-120661/22-A //B 600-120661/21-A each Batch: 120664 Lab Sample ID S00-82260-12 S00-82260-13 S00-82260-24	SKU936-04-15 Client Sample ID SKU936-02-25 Lab Control Sample Method Blank Client Sample ID SKU936-04-20 SKU936-04-25	Total/NA Prep Type Soluble Soluble Prep Type Soluble Soluble Soluble Soluble Soluble Soluble Soluble	Solid Matrix Solid	Moisture Method DI Leach DI Leach DI Leach DI Leach DI Leach DI Leach	Prep Bato
S00-82260-33 DU each Batch: 120661 Lab Sample ID S00-82260-23 LCS 600-120661/22-A MB 600-120661/21-A each Batch: 120664 Lab Sample ID S00-82260-12 S00-82260-12 S00-82260-12 S00-82260-24 S00-82260-24 MS	SKU936-04-15 Client Sample ID SKU936-02-25 Lab Control Sample Method Blank Client Sample ID SKU936-04-20 SKU936-04-25 SKU936-03-02 SKU936-03-02	Total/NA Prep Type Soluble Soluble Prep Type Soluble Soluble Soluble Soluble Soluble Soluble Soluble Soluble Soluble	Solid Matrix Solid Solid Solid Solid Matrix Solid Solid Solid	Moisture Moisture Method DI Leach	
300-82260-33 DU ach Batch: 120661 ab Sample ID 300-82260-23 .CS 600-120661/22-A //B 600-120661/21-A ach Batch: 120664 ach Batch: 120664 .ab Sample ID 300-82260-12 300-82260-12 300-82260-24 300-82260-24 MS 300-82260-24 MSD	SKU936-04-15 Client Sample ID SKU936-02-25 Lab Control Sample Method Blank Client Sample ID SKU936-04-20 SKU936-04-25 SKU936-03-02 SKU936-03-02 SKU936-03-02 SKU936-03-02	Total/NA Prep Type Soluble Soluble Prep Type Soluble Soluble Soluble Soluble Soluble Soluble Soluble Soluble	Solid Matrix Solid Solid Solid Solid Matrix Solid Solid Solid Solid Solid	Moisture Method DI Leach DI Leach DI Leach DI Leach DI Leach DI Leach DI Leach	
300-82260-33 DU each Batch: 120661 Lab Sample ID 300-82260-23 LCS 600-120661/22-A //B 600-120661/21-A each Batch: 120664 Lab Sample ID 500-82260-12 500-82260-12 500-82260-12 500-82260-24 500-82260-24 MS 500-82260-24 MSD 500-82260-25	SKU936-04-15 Client Sample ID SKU936-02-25 Lab Control Sample Method Blank Client Sample ID SKU936-04-20 SKU936-04-25 SKU936-03-02 SKU936-03-05	Total/NA Prep Type Soluble Soluble Prep Type Prep Type Soluble	Solid Matrix Solid	Moisture Moisture Moisture Method DI Leach	
000-82260-33 DU ach Batch: 120661 ab Sample ID 000-82260-23 .CS 600-120661/22-A /B 600-120661/21-A ach Batch: 120664 .ab Sample ID 000-82260-12 .000-82260-24 .000-82260-24 MS .000-82260-24 MSD .000-82260-25 .000-82260-26	SKU936-04-15 Client Sample ID SKU936-02-25 Lab Control Sample Method Blank Client Sample ID SKU936-04-20 SKU936-04-25 SKU936-03-02 SKU936-03-02 SKU936-03-02 SKU936-03-02	Total/NA Prep Type Soluble Soluble Prep Type Soluble	Solid Matrix Solid	Moisture Moisture Moisture Method DI Leach	
000-82260-33 DU ach Batch: 120661 ab Sample ID 000-82260-23 .CS 600-120661/22-A /B 600-120661/21-A ach Batch: 120664 ab Sample ID 000-82260-12 000-82260-24 000-82260-24 000-82260-24 MS 000-82260-25 000-82260-26 000-82260-27	SKU936-04-15 Client Sample ID SKU936-02-25 Lab Control Sample Method Blank Client Sample ID SKU936-04-20 SKU936-04-25 SKU936-03-02 SKU936-03-02 SKU936-03-02 SKU936-03-02 SKU936-03-05 SKU936-03-10 SKU936-03-15	Total/NA Prep Type Soluble	Solid Matrix Solid	Moisture Method DI Leach DI Leach	
000-82260-33 DU ach Batch: 120661 ab Sample ID 000-82260-23 .CS 600-120661/22-A /B 600-120661/21-A ach Batch: 120664 ab Sample ID 000-82260-12 000-82260-24 000-82260-24 000-82260-24 MS 000-82260-25 000-82260-25 000-82260-27 000-82260-28	SKU936-04-15 Client Sample ID SKU936-02-25 Lab Control Sample Method Blank Client Sample ID SKU936-04-20 SKU936-04-25 SKU936-03-02 SKU936-03-02 SKU936-03-02 SKU936-03-02 SKU936-03-10 SKU936-03-15 SKU936-03-20	Total/NA	Solid Matrix Solid	Moisture Moisture Moisture Method DI Leach	
300-82260-33 DU each Batch: 120661 ab Sample ID 300-82260-23 CS 600-120661/22-A //B 600-120661/21-A each Batch: 120664 ab Sample ID 300-82260-12 300-82260-13 300-82260-24 300-82260-24 300-82260-25 300-82260-26 300-82260-27 300-82260-28 300-82260-29	SKU936-04-15 Client Sample ID SKU936-02-25 Lab Control Sample Method Blank Client Sample ID SKU936-04-20 SKU936-04-25 SKU936-03-02 SKU936-03-02 SKU936-03-02 SKU936-03-02 SKU936-03-02 SKU936-03-02 SKU936-03-02 SKU936-03-02 SKU936-03-20 SKU936-03-15 SKU936-03-20 SKU936-03-25	Total/NA Prep Type Soluble	Solid Matrix Solid	Moisture Method DI Leach DI Leach	
000-82260-33 DU each Batch: 120661 ab Sample ID 000-82260-23 CS 600-120661/22-A //B 600-120661/21-A each Batch: 120664 ab Sample ID 000-82260-12 000-82260-24 000-82260-24 000-82260-24 MS 000-82260-25 000-82260-26 000-82260-27 000-82260-28 000-82260-29 000-82260-30	SKU936-04-15 Client Sample ID SKU936-02-25 Lab Control Sample Method Blank Client Sample ID SKU936-04-20 SKU936-04-25 SKU936-03-02 SKU936-03-02 SKU936-03-02 SKU936-03-05 SKU936-03-10 SKU936-03-20 SKU936-03-20 SKU936-03-20 SKU936-03-20 SKU936-03-20 SKU936-03-25 SKU936-04-02	Total/NA Prep Type Soluble Soluble	Solid Matrix Solid	Moisture Moisture Moisture Method DI Leach	
00-82260-33 DU ach Batch: 120661 ab Sample ID 00-82260-23 CS 600-120661/22-A //B 600-120661/21-A ach Batch: 120664 (ab Sample ID 00-82260-12 00-82260-24 00-82260-24 00-82260-24 MS 00-82260-25 00-82260-25 00-82260-27 00-82260-28 00-82260-28 00-82260-30 00-82260-31	SKU936-04-15 Client Sample ID SKU936-02-25 Lab Control Sample Method Blank Client Sample ID SKU936-04-20 SKU936-04-20 SKU936-04-20 SKU936-03-02 SKU936-03-02 SKU936-03-02 SKU936-03-02 SKU936-03-02 SKU936-03-10 SKU936-03-15 SKU936-03-20 SKU936-03-20 SKU936-03-25 SKU936-04-02 SKU936-04-05	Total/NA Prep Type Soluble Soluble Soluble Prep Type Soluble Soluble	Solid Matrix Solid	Moisture Method DI Leach DI Leach	
00-82260-33 DU ach Batch: 120661 ab Sample ID 00-82260-23 CS 600-120661/22-A /B 600-120661/21-A ach Batch: 120664 ab Sample ID 00-82260-12 00-82260-24 00-82260-24 00-82260-24 MS 00-82260-24 MSD 00-82260-25 00-82260-25 00-82260-27 00-82260-28 00-82260-28 00-82260-30 00-82260-31 00-82260-31 MS	SKU936-04-15 Client Sample ID SKU936-02-25 Lab Control Sample Method Blank Client Sample ID SKU936-04-20 SKU936-04-25 SKU936-03-02 SKU936-03-02 SKU936-03-02 SKU936-03-02 SKU936-03-02 SKU936-03-02 SKU936-03-02 SKU936-03-20 SKU936-03-10 SKU936-03-20 SKU936-03-20 SKU936-03-25 SKU936-04-02 SKU936-04-05 SKU936-04-05	Total/NA Prep Type Soluble Soluble	Solid Matrix Solid	Moisture Moisture Moisture Method DI Leach	
000-82260-33 DU ach Batch: 120661 ab Sample ID 000-82260-23 .CS 600-120661/22-A /B 600-120661/21-A ach Batch: 120664 .ab Sample ID 000-82260-12 .000-82260-12 .000-82260-24 .000-82260-24 .000-82260-24 .000-82260-24 .000-82260-25 .000-82260-26 .000-82260-28 .000-82260-29 .000-82260-31 .000-82260-31 MS .000-82260-31 MSD	SKU936-04-15 Client Sample ID SKU936-02-25 Lab Control Sample Method Blank Client Sample ID SKU936-04-20 SKU936-04-25 SKU936-04-25 SKU936-03-02 SKU936-03-02 SKU936-03-02 SKU936-03-02 SKU936-03-02 SKU936-03-10 SKU936-03-20 SKU936-03-20 SKU936-03-25 SKU936-04-02 SKU936-04-05 SKU936-04-05 SKU936-04-05 SKU936-04-05	Total/NA Prep Type Soluble Soluble	Solid Matrix Solid	Moisture Moisture Moisture Method DI Leach	
200-82260-33 DU 200-82260-33 DU 200-82260-23 200-82260-24 200-82	SKU936-04-15 Client Sample ID SKU936-02-25 Lab Control Sample Method Blank Client Sample ID SKU936-04-20 SKU936-04-25 SKU936-03-02 SKU936-03-02 SKU936-03-02 SKU936-03-02 SKU936-03-02 SKU936-03-02 SKU936-03-02 SKU936-03-20 SKU936-03-10 SKU936-03-20 SKU936-03-20 SKU936-03-25 SKU936-04-02 SKU936-04-05 SKU936-04-05	Total/NA Prep Type Soluble Soluble	Solid Matrix Solid	Moisture Moisture Moisture Method DI Leach	

General Chemistry (Continued)

Leach Batch: 120664 (Continued)

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
600-82260-34 MS	SKU936-01-02	Soluble	Solid	DI Leach	
600-82260-34 MSD	SKU936-01-02	Soluble	Solid	DI Leach	
600-82260-35	SKU936-01-05	Soluble	Solid	DI Leach	
600-82260-36	SKU936-01-10	Soluble	Solid	DI Leach	
600-82260-37	SKU936-01-15	Soluble	Solid	DI Leach	
600-82260-38	SKU936-01-20	Soluble	Solid	DI Leach	
600-82260-39	SKU936-01-25	Soluble	Solid	DI Leach	
600-82260-40	SKU936-02-02	Soluble	Solid	DI Leach	
600-82260-41	SKU936-02-05	Soluble	Solid	DI Leach	
600-82260-42	SKU936-02-10	Soluble	Solid	DI Leach	
600-82260-42 MS	SKU936-02-10	Soluble	Solid	DI Leach	
600-82260-42 MSD	SKU936-02-10	Soluble	Solid	DI Leach	
600-82260-43	SKU936-02-15	Soluble	Solid	DI Leach	
600-82260-44	SKU936-02-20	Soluble	Solid	DI Leach	
LCS 600-120664/22-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCS 600-120664/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
MB 600-120664/1-A	Method Blank	Soluble	Solid	DI Leach	
MB 600-120664/21-A	Method Blank	Soluble	Solid	DI Leach	

Analysis Batch: 120752

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
600-82260-23	SKU936-02-25	Soluble	Solid	9056	120661
600-82260-24	SKU936-03-02	Soluble	Solid	9056	120664
600-82260-24 MS	SKU936-03-02	Soluble	Solid	9056	120664
600-82260-24 MSD	SKU936-03-02	Soluble	Solid	9056	120664
600-82260-25	SKU936-03-05	Soluble	Solid	9056	120664
600-82260-26	SKU936-03-10	Soluble	Solid	9056	120664
600-82260-27	SKU936-03-15	Soluble	Solid	9056	120664
600-82260-28	SKU936-03-20	Soluble	Solid	9056	120664
LCS 600-120661/22-A	Lab Control Sample	Soluble	Solid	9056	120661
LCS 600-120664/2-A	Lab Control Sample	Soluble	Solid	9056	120664
MB 600-120661/21-A	Method Blank	Soluble	Solid	9056	120661
MB 600-120664/1-A	Method Blank	Soluble	Solid	9056	120664

Analysis Batch: 120842

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-82260-12	SKU936-04-20	Soluble	Solid	9056	120664
600-82260-13	SKU936-04-25	Soluble	Solid	9056	120664
600-82260-29	SKU936-03-25	Soluble	Solid	9056	120664
600-82260-30	SKU936-04-02	Soluble	Solid	9056	120664
600-82260-31	SKU936-04-05	Soluble	Solid	9056	120664
600-82260-31 MS	SKU936-04-05	Soluble	Solid	9056	120664
600-82260-31 MSD	SKU936-04-05	Soluble	Solid	9056	120664
600-82260-32	SKU936-04-10	Soluble	Solid	9056	120664
600-82260-33	SKU936-04-15	Soluble	Solid	9056	120664
600-82260-34	SKU936-01-02	Soluble	Solid	9056	120664
600-82260-34 MS	SKU936-01-02	Soluble	Solid	9056	120664
600-82260-34 MSD	SKU936-01-02	Soluble	Solid	9056	120664
600-82260-35	SKU936-01-05	Soluble	Solid	9056	120664
600-82260-36	SKU936-01-10	Soluble	Solid	9056	120664
600-82260-37	SKU936-01-15	Soluble	Solid	9056	120664

TestAmerica Job ID: 600-82260-1

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General Chemistry (Continued)

Analysis Batch: 120842 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-82260-38	SKU936-01-20	Soluble	Solid	9056	120664
600-82260-39	SKU936-01-25	Soluble	Solid	9056	120664
600-82260-40	SKU936-02-02	Soluble	Solid	9056	120664
600-82260-41	SKU936-02-05	Soluble	Solid	9056	120664
600-82260-42	SKU936-02-10	Soluble	Solid	9056	120664
600-82260-42 MS	SKU936-02-10	Soluble	Solid	9056	120664
600-82260-42 MSD	SKU936-02-10	Soluble	Solid	9056	120664
600-82260-43	SKU936-02-15	Soluble	Solid	9056	120664
600-82260-44	SKU936-02-20	Soluble	Solid	9056	120664
LCS 600-120664/22-A	Lab Control Sample	Soluble	Solid	9056	120664
MB 600-120664/21-A	Method Blank	Soluble	Solid	9056	120664

Lab Sample ID: 600-82260-12

Client Sample ID: SKU936-04-20

Date Collected: 11/05/13 09:58 Date Received: 11/07/13 07:01

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			10 g	200 mL	120604	11/08/13 12:17	MHT	TAL HOU
Total/NA	Analysis	8015B		1	10 g	200 mL	120915	11/11/13 23:45	MHT	TAL HOU
Total/NA	Prep	5030B			10 g	10 mL	120595	11/07/13 10:36	MHT	TAL HOU
Total/NA	Analysis	8021B		1	10 g	10 mL	121138	11/15/13 13:54	MHT	TAL HOU
Total/NA	Prep	3550B			30.05 g	1.0 mL	120105	11/11/13 09:58	LMB	TAL HOU
Total/NA	Analysis	8015B		1	30.05 g	1.0 mL	120365	11/13/13 04:46	JPS	TAL HOU
Total/NA	Analysis	Moisture		1			120024	11/08/13 14:11	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	120664	11/15/13 10:30	KRD	TAL HOU
Soluble	Analysis	9056		1	5 mL	5 mL	120842	11/18/13 23:00	DAW	TAL HOU

Client Sample ID: SKU936-04-25

Date Collected: 11/05/13 10:00 Date Received: 11/07/13 07:01

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Ргер Туре	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			10 g	200 mL	120604	11/08/13 12:17	MHT	TAL HOU
Total/NA	Analysis	8015B		1	10 g	200 mL	120915	11/12/13 00:11	MHT	TAL HOU
Total/NA	Prep	5030B			10 g	10 mL	120595	11/07/13 10:36	MHT	TAL HOU
Total/NA	Analysis	8021B		1	10 g	10 mL	121138	11/15/13 14:16	MHT	TAL HOU
Total/NA	Prep	3550B			30.04 g	1.0 mL	120105	11/11/13 09:58	LMB	TAL HOU
Total/NA	Analysis	8015B		1	30.04 g	1.0 mL	120365	11/13/13 05:51	JPS	TAL HOU
Total/NA	Analysis	Moisture		1			120024	11/08/13 14:11	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	120664	11/15/13 10:30	KRD	TAL HOU
Soluble	Analysis	9056		1	5 mL	5 mL	120842	11/18/13 23:16	DAW	TAL HOU

Client Sample ID: SKU936-02-25 Date Collected: 11/04/13 11:56 Date Received: 11/07/13 07:01

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			10 g	200 mL	120604	11/08/13 12:17	MHT	TAL HOU
Total/NA	Analysis	8015B		1	10 g	200 mL	120915	11/12/13 00:36	MHT	TAL HOU
Total/NA	Prep	5030B			10 g	10 mL	120595	11/07/13 10:36	MHT	TAL HOU
Total/NA	Analysis	8021B		1	10 g	10 mL	121138	11/15/13 14:38	MHT	TAL HOU
Total/NA	Prep	3550B			30.08 g	1.0 mL	120114	11/11/13 10:58	EAT	TAL HOU
Total/NA	Analysis	8015B		1	30.08 g	1.0 mL	120353	11/13/13 06:55	JPS	TAL HOU
Total/NA	Analysis	Moisture		1			119895	11/07/13 13:58	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	120661	11/15/13 10:15	KRD	TAL HOU
Soluble	Analysis	9056		1	5 mL	5 mL	120752	11/16/13 21:40	DAW	TAL HOU

Lab Sample	ID:	600-82260-23
		Matrix: Solid

Percent Solids: 96.2

5 6

Matrix: Solid

Percent Solids: 94.2

Matrix: Solid

Matrix: Solid

Matrix: Solid

Percent Solids: 97.6

Percent Solids: 98.0

Percent Solids: 93.1

Client Sample ID: SKU936-03-02

Date Collected: 11/04/13 12:40 Date Received: 11/07/13 07:01

		-								
	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			10 g	200 mL	120604	11/08/13 12:17	MHT	TAL HOU
Total/NA	Analysis	8015B		1	10 g	200 mL	120915	11/12/13 01:01	MHT	TAL HOU
Total/NA	Prep	5030B			10 g	10 mL	120595	11/07/13 10:36	MHT	TAL HOU
Total/NA	Analysis	8021B		1	10 g	10 mL	121138	11/15/13 14:59	MHT	TAL HOU
Total/NA	Prep	3550B			30.03 g	1.0 mL	120114	11/11/13 10:58	EAT	TAL HOU
Total/NA	Analysis	8015B		1	30.03 g	1.0 mL	120353	11/13/13 07:27	JPS	TAL HOU
Total/NA	Analysis	Moisture		1			119895	11/07/13 13:58	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	120664	11/15/13 10:30	KRD	TAL HOU
Soluble	Analysis	9056		1	5 mL	5 mL	120752	11/16/13 22:20	DAW	TAL HOU

Client Sample ID: SKU936-03-05

Date Collected: 11/04/13 12:42 Date Received: 11/07/13 07:01

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			10 g	200 mL	120604	11/08/13 12:17	MHT	TAL HOU
Total/NA	Analysis	8015B		1	10 g	200 mL	120915	11/12/13 01:26	MHT	TAL HOU
Total/NA	Analysis	8021B		1	10 g	10 mL	121138	11/15/13 23:15	MHT	TAL HOU
Total/NA	Prep	5030B			10 g	10 mL	120595	11/07/13 10:36	MHT	TAL HOU
Total/NA	Analysis	8021B		1	10 g	10 mL	121138	11/15/13 15:21	MHT	TAL HOU
Total/NA	Prep	3550B			30.18 g	1.0 mL	120225	11/12/13 10:22	EAT	TAL HOU
Total/NA	Analysis	8015B		1	30.18 g	1.0 mL	120431	11/13/13 13:22	JPS	TAL HOU
Total/NA	Analysis	8015B		1	30.18 g	1.0 mL	120434	11/13/13 13:22	JPS	TAL HOU
Total/NA	Analysis	Moisture		1			119895	11/07/13 13:58	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	120664	11/15/13 10:30	KRD	TAL HOU
Soluble	Analysis	9056		1	5 mL	5 mL	120752	11/16/13 23:01	DAW	TAL HOU

Client Sample ID: SKU936-03-10 Date Collected: 11/04/13 12:44 Date Received: 11/07/13 07:01

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			10 g	200 mL	120604	11/08/13 12:17	MHT	TAL HOU
Total/NA	Analysis	8015B		1	10 g	200 mL	120915	11/12/13 01:51	MHT	TAL HOU
Total/NA	Prep	5030B			10 g	10 mL	120595	11/07/13 10:36	MHT	TAL HOU
Total/NA	Analysis	8021B		1	10 g	10 mL	121186	11/14/13 14:52	MHT	TAL HOU
Total/NA	Prep	3550B			30.02 g	1.0 mL	120105	11/11/13 09:58	LMB	TAL HOU
Total/NA	Analysis	8015B		1	30.02 g	1.0 mL	120365	11/12/13 18:54	JPS	TAL HOU
Total/NA	Analysis	Moisture		1			119895	11/07/13 13:58	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	120664	11/15/13 10:30	KRD	TAL HOU
Soluble	Analysis	9056		1	5 mL	5 mL	120752	11/16/13 23:14	DAW	TAL HOU

TestAmerica Houston

Lab Sample ID: 600-82260-25

Lab Sample ID: 600-82260-26

Lab Sample ID: 600-82260-27

Client Sample ID: SKU936-03-15

Date Collected: 11/04/13 12:46 Date Received: 11/07/13 07:01

ate Received:	te Received: 11/07/13 07:01									Percent Solids: 98	
-	Batch	Batch		Dil	Initial	Final	Batch	Prepared			
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab	
Total/NA	Prep	5030B			10 g	200 mL	120604	11/08/13 12:17	MHT	TAL HOU	
Total/NA	Analysis	8015B		1	10 g	200 mL	120915	11/12/13 02:16	MHT	TAL HOU	
Total/NA	Prep	5030B			10 g	10 mL	120595	11/07/13 10:36	MHT	TAL HOU	
Total/NA	Analysis	8021B		1	10 g	10 mL	121138	11/15/13 16:05	MHT	TAL HOU	
Total/NA	Prep	3550B			30.00 g	1.0 mL	120105	11/11/13 09:58	LMB	TAL HOU	
Total/NA	Analysis	8015B		1	30.00 g	1.0 mL	120365	11/12/13 19:27	JPS	TAL HOU	
Total/NA	Analysis	Moisture		1			119895	11/07/13 13:58	AYS	TAL HOU	
Soluble	Leach	DI Leach			5 g	50 mL	120664	11/15/13 10:30	KRD	TAL HOU	
Soluble	Analysis	9056		1	5 mL	5 mL	120752	11/16/13 23:28	DAW	TAL HOU	

Client Sample ID: SKU936-03-20

Date Collected: 11/04/13 12:48 Date Received: 11/07/13 07:01

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Ргер Туре	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			10 g	200 mL	120604	11/08/13 12:17	MHT	TAL HOU
Total/NA	Analysis	8015B		1	10 g	200 mL	120915	11/12/13 02:41	MHT	TAL HOU
Total/NA	Prep	5030B			10 g	10 mL	120602	11/07/13 16:30	MHT	TAL HOU
Total/NA	Analysis	8021B		1	10 g	10 mL	121186	11/14/13 15:12	MHT	TAL HOU
Total/NA	Prep	3550B			30.01 g	1.0 mL	120105	11/11/13 09:58	LMB	TAL HOU
Total/NA	Analysis	8015B		1	30.01 g	1.0 mL	120365	11/12/13 20:01	JPS	TAL HOU
Total/NA	Analysis	Moisture		1			119895	11/07/13 13:58	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	120664	11/15/13 10:30	KRD	TAL HOU
Soluble	Analysis	9056		1	5 mL	5 mL	120752	11/17/13 00:08	DAW	TAL HOU

Client Sample ID: SKU936-03-25 Date Collected: 11/04/13 12:50 Date Received: 11/07/13 07:01

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			10 g	200 mL	120604	11/08/13 12:17	MHT	TAL HOU
Total/NA	Analysis	8015B		1	10 g	200 mL	120915	11/12/13 07:25	MHT	TAL HOU
Total/NA	Prep	5030B			10 g	10 mL	120595	11/07/13 10:36	MHT	TAL HOU
Total/NA	Analysis	8021B		1	10 g	10 mL	121138	11/15/13 17:37	MHT	TAL HOU
Total/NA	Prep	3550B			30.00 g	1.0 mL	120105	11/11/13 09:58	LMB	TAL HOU
Total/NA	Analysis	8015B		1	30.00 g	1.0 mL	120365	11/12/13 20:34	JPS	TAL HOU
Total/NA	Analysis	Moisture		1			119895	11/07/13 13:58	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	120664	11/15/13 10:30	KRD	TAL HOU
Soluble	Analysis	9056		2	5 mL	5 mL	120842	11/18/13 17:19	DAW	TAL HOU

11

Lab Sample ID: 600-82260-28

Lab Sample ID: 600-82260-29

Matrix: Solid Percent Solids: 96.7

Matrix: Solid

Percent Solids: 94.9

Matrix: Solid

Lab Sample ID: 600-82260-30

Lab Sample ID: 600-82260-31

Lab Sample ID: 600-82260-32

Matrix: Solid

Matrix: Solid

Matrix: Solid

Percent Solids: 95.0

Percent Solids: 98.1

5

11

Client Sample ID: SKU936-04-02

Date Collected: 11/05/13 09:50 Date Received: 11/07/13 07:01

Date Received:	11/07/13 07:0	01							Percent	Solids: 97.8
-	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			10 g	200 mL	120606	11/09/13 12:36	MHT	TAL HOU
Total/NA	Analysis	8015B		1	10 g	200 mL	120802	11/15/13 20:12	MHT	TAL HOU
Total/NA	Prep	5030B			10 g	10 mL	120595	11/07/13 10:36	MHT	TAL HOU
Total/NA	Analysis	8021B		1	10 g	10 mL	121138	11/15/13 18:04	MHT	TAL HOU
Total/NA	Prep	3550B			30.09 g	1.0 mL	120105	11/11/13 09:58	LMB	TAL HOU
Total/NA	Analysis	8015B		1	30.09 g	1.0 mL	120365	11/13/13 06:23	JPS	TAL HOU
Total/NA	Analysis	Moisture		1			120024	11/08/13 14:11	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	120664	11/15/13 10:30	KRD	TAL HOU
Soluble	Analysis	9056		2	5 mL	5 mL	120842	11/18/13 23:31	DAW	TAL HOU

Client Sample ID: SKU936-04-05

Date Collected: 11/05/13 09:52 Date Received: 11/07/13 07:01

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			10 g	200 mL	120606	11/09/13 12:36	MHT	TAL HOU
Total/NA	Analysis	8015B		1	10 g	200 mL	120802	11/15/13 20:37	MHT	TAL HOU
Total/NA	Prep	5030B			10 g	10 mL	120595	11/07/13 10:36	MHT	TAL HOU
Total/NA	Analysis	8021B		1	10 g	10 mL	121138	11/15/13 18:42	MHT	TAL HOU
Total/NA	Prep	3550B			30.01 g	1.0 mL	120105	11/11/13 09:58	LMB	TAL HOU
Total/NA	Analysis	8015B		1	30.01 g	1.0 mL	120365	11/13/13 06:55	JPS	TAL HOU
Total/NA	Analysis	Moisture		1			120024	11/08/13 14:11	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	120664	11/15/13 10:30	KRD	TAL HOU
Soluble	Analysis	9056		1	5 mL	5 mL	120842	11/18/13 23:47	DAW	TAL HOU

Client Sample ID: SKU936-04-10 Date Collected: 11/05/13 09:54 Date Received: 11/07/13 07:01

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			10 g	200 mL	120606	11/09/13 12:36	MHT	TAL HOU
Total/NA	Analysis	8015B		1	10 g	200 mL	120802	11/15/13 21:02	MHT	TAL HOU
Total/NA	Prep	5030B			10 g	10 mL	120595	11/07/13 10:36	MHT	TAL HOU
Total/NA	Analysis	8021B		1	10 g	10 mL	121138	11/15/13 19:14	MHT	TAL HOU
Total/NA	Prep	3550B			30.04 g	1.0 mL	120105	11/11/13 09:58	LMB	TAL HOU
Total/NA	Analysis	8015B		1	30.04 g	1.0 mL	120365	11/13/13 07:27	JPS	TAL HOU
Total/NA	Analysis	Moisture		1			120024	11/08/13 14:11	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	120664	11/15/13 10:30	KRD	TAL HOU
Soluble	Analysis	9056		1	5 mL	5 mL	120842	11/19/13 00:33	DAW	TAL HOU

Lab Sample ID: 600-82260-33

Lab Sample ID: 600-82260-34

Lab Sample ID: 600-82260-35

Matrix: Solid

Matrix: Solid

Matrix: Solid

Percent Solids: 97.7

Percent Solids: 81.1

11

Client Sample ID: SKU936-04-15

Date Collected: 11/05/13 09:56

ate Received:	11/07/13 07:0)1							Percent	Solids: 94.8
-	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			10 g	200 mL	120606	11/09/13 12:36	MHT	TAL HOU
Total/NA	Analysis	8015B		1	10 g	200 mL	120802	11/15/13 21:27	MHT	TAL HOU
Total/NA	Prep	5030B			10 g	10 mL	120595	11/07/13 10:36	MHT	TAL HOU
Total/NA	Analysis	8021B		1	10 g	10 mL	121138	11/15/13 19:36	MHT	TAL HOU
Total/NA	Prep	3550B			30.15 g	1.0 mL	120225	11/12/13 10:22	EAT	TAL HOU
Total/NA	Analysis	8015B		1	30.15 g	1.0 mL	120434	11/13/13 15:01	JPS	TAL HOU
Total/NA	Analysis	Moisture		1			120024	11/08/13 14:11	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	120664	11/15/13 10:30	KRD	TAL HOU
Soluble	Analysis	9056		1	5 mL	5 mL	120842	11/19/13 00:49	DAW	TAL HOU

Client Sample ID: SKU936-01-02

Date Collected: 11/04/13 13:57 Date Received: 11/07/13 07:01

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			10 g	200 mL	120604	11/08/13 12:17	MHT	TAL HOU
Total/NA	Analysis	8015B		1	10 g	200 mL	120915	11/12/13 07:50	MHT	TAL HOU
Total/NA	Prep	5030B			10 g	10 mL	120595	11/07/13 10:36	MHT	TAL HOU
Total/NA	Analysis	8021B		1	10 g	10 mL	121138	11/15/13 19:58	MHT	TAL HOU
Total/NA	Prep	3550B			30.01 g	1.0 mL	120105	11/11/13 09:58	LMB	TAL HOU
Total/NA	Analysis	8015B		1	30.01 g	1.0 mL	120365	11/12/13 22:14	JPS	TAL HOU
Total/NA	Analysis	Moisture		1			119895	11/07/13 13:58	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	120664	11/15/13 10:30	KRD	TAL HOU
Soluble	Analysis	9056		1	5 mL	5 mL	120842	11/18/13 17:35	DAW	TAL HOU

Client Sample ID: SKU936-01-05 Date Collected: 11/04/13 14:00 Date Received: 11/07/13 07:01

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			10 g	200 mL	120604	11/08/13 12:17	MHT	TAL HOU
Total/NA	Analysis	8015B		1	10 g	200 mL	120915	11/12/13 08:15	MHT	TAL HOU
Total/NA	Prep	5030B			10 g	10 mL	120595	11/07/13 10:36	MHT	TAL HOU
Total/NA	Analysis	8021B		1	10 g	10 mL	121138	11/15/13 20:20	MHT	TAL HOU
Total/NA	Prep	3550B			30.05 g	1.0 mL	120105	11/11/13 09:58	LMB	TAL HOU
Total/NA	Analysis	8015B		1	30.05 g	1.0 mL	120365	11/12/13 22:47	JPS	TAL HOU
Total/NA	Analysis	Moisture		1			119895	11/07/13 13:58	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	120664	11/15/13 10:30	KRD	TAL HOU
Soluble	Analysis	9056		1	5 mL	5 mL	120842	11/18/13 18:21	DAW	TAL HOU

Lab Sample ID: 600-82260-36

Client Sample ID: SKU936-01-10

Date Collected: 11/04/13 14:02 Date Received: 11/07/13 07:01

-	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			10 g	200 mL	120604	11/08/13 12:17	MHT	TAL HOU
Total/NA	Analysis	8015B		1	10 g	200 mL	120915	11/12/13 08:40	MHT	TAL HOU
Total/NA	Prep	5030B			10 g	10 mL	120595	11/07/13 10:36	MHT	TAL HOU
Total/NA	Analysis	8021B		1	10 g	10 mL	121138	11/15/13 20:42	MHT	TAL HOU
Total/NA	Prep	3550B			30.07 g	1.0 mL	120105	11/11/13 09:58	LMB	TAL HOU
Total/NA	Analysis	8015B		1	30.07 g	1.0 mL	120365	11/12/13 23:53	JPS	TAL HOU
Total/NA	Analysis	Moisture		1			119895	11/07/13 13:58	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	120664	11/15/13 10:30	KRD	TAL HOU
Soluble	Analysis	9056		1	5 mL	5 mL	120842	11/18/13 18:37	DAW	TAL HOU

Client Sample ID: SKU936-01-15

Date Collected: 11/04/13 14:04 Date Received: 11/07/13 07:01

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			10 g	200 mL	120604	11/08/13 12:17	MHT	TAL HOU
Total/NA	Analysis	8015B		1	10 g	200 mL	120915	11/12/13 09:05	MHT	TAL HOU
Total/NA	Prep	5030B			10 g	10 mL	120595	11/07/13 10:36	MHT	TAL HOU
Total/NA	Analysis	8021B		1	10 g	10 mL	121138	11/15/13 21:03	MHT	TAL HOU
Total/NA	Prep	3550B			30.00 g	1.0 mL	120105	11/11/13 09:58	LMB	TAL HOU
Total/NA	Analysis	8015B		1	30.00 g	1.0 mL	120365	11/13/13 00:26	JPS	TAL HOU
Total/NA	Analysis	Moisture		1			119895	11/07/13 13:58	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	120664	11/15/13 10:30	KRD	TAL HOU
Soluble	Analysis	9056		1	5 mL	5 mL	120842	11/18/13 18:52	DAW	TAL HOU

Client Sample ID: SKU936-01-20 Date Collected: 11/04/13 14:06 Date Received: 11/07/13 07:01

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			10 g	200 mL	120604	11/08/13 12:17	MHT	TAL HOU
Total/NA	Analysis	8015B		1	10 g	200 mL	120915	11/12/13 09:30	MHT	TAL HOU
Total/NA	Prep	5030B			10 g	10 mL	120595	11/07/13 10:36	MHT	TAL HOU
Total/NA	Analysis	8021B		1	10 g	10 mL	121138	11/15/13 22:09	MHT	TAL HOU
Total/NA	Prep	3550B			30.02 g	1.0 mL	120105	11/11/13 09:58	LMB	TAL HOU
Total/NA	Analysis	8015B		1	30.02 g	1.0 mL	120365	11/13/13 00:58	JPS	TAL HOU
Total/NA	Analysis	Moisture		1			119895	11/07/13 13:58	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	120664	11/15/13 10:30	KRD	TAL HOU
Soluble	Analysis	9056		2	5 mL	5 mL	120842	11/18/13 20:10	DAW	TAL HOU

11

Lab Sample ID: 600-82260-37

Lab Sample ID: 600-82260-38

Matrix: Solid Percent Solids: 98.4

Matrix: Solid

Percent Solids: 98.6

Matrix: Solid

Percent Solids: 98.8

Lab Sample ID: 600-82260-39

Client Sample ID: SKU936-01-25

Date Collected: 11/04/13 14:08 Date Received: 11/07/13 07:01

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			10 g	200 mL	120604	11/08/13 12:17	MHT	TAL HOU
Total/NA	Analysis	8015B		1	10 g	200 mL	120915	11/12/13 09:55	MHT	TAL HOU
Total/NA	Prep	5030B			10 g	10 mL	120595	11/07/13 10:36	MHT	TAL HOU
Total/NA	Analysis	8021B		1	10 g	10 mL	121138	11/15/13 22:31	MHT	TAL HOU
Total/NA	Prep	3550B			30.03 g	1.0 mL	120105	11/11/13 09:58	LMB	TAL HOU
Total/NA	Analysis	8015B		1	30.03 g	1.0 mL	120365	11/13/13 01:31	JPS	TAL HOU
Total/NA	Analysis	Moisture		1			119895	11/07/13 13:58	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	120664	11/15/13 10:30	KRD	TAL HOU
Soluble	Analysis	9056		2	5 mL	5 mL	120842	11/18/13 20:25	DAW	TAL HOU

Client Sample ID: SKU936-02-02

Date Collected: 11/04/13 11:46 Date Received: 11/07/13 07:01

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			10 g	200 mL	120604	11/08/13 12:17	MHT	TAL HOU
Total/NA	Analysis	8015B		1	10 g	200 mL	120915	11/12/13 10:20	MHT	TAL HOU
Total/NA	Prep	5030B			10 g	10 mL	120595	11/07/13 10:36	MHT	TAL HOU
Total/NA	Analysis	8021B		1	10 g	10 mL	121138	11/15/13 22:53	MHT	TAL HOU
Total/NA	Prep	3550B			30.06 g	1.0 mL	120105	11/11/13 09:58	LMB	TAL HOU
Total/NA	Analysis	8015B		1	30.06 g	1.0 mL	120365	11/13/13 02:04	JPS	TAL HOU
Total/NA	Analysis	Moisture		1			119895	11/07/13 13:58	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	120664	11/15/13 10:30	KRD	TAL HOU
Soluble	Analysis	9056		1	5 mL	5 mL	120842	11/18/13 20:41	DAW	TAL HOU

Client Sample ID: SKU936-02-05 Date Collected: 11/04/13 11:48 Date Received: 11/07/13 07:01

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			10 g	200 mL	120604	11/08/13 12:17	MHT	TAL HOU
Total/NA	Analysis	8015B		1	10 g	200 mL	120915	11/12/13 10:45	MHT	TAL HOU
Total/NA	Prep	5030B			10 g	10 mL	120602	11/07/13 16:10	MHT	TAL HOU
Total/NA	Analysis	8021B		1	10 g	10 mL	121143	11/16/13 01:48	MHT	TAL HOU
Total/NA	Prep	3550B			30.08 g	1.0 mL	120105	11/11/13 09:58	LMB	TAL HOU
Total/NA	Analysis	8015B		1	30.08 g	1.0 mL	120365	11/13/13 02:36	JPS	TAL HOU
Total/NA	Analysis	Moisture		1			119895	11/07/13 13:58	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	120664	11/15/13 10:30	KRD	TAL HOU
Soluble	Analysis	9056		1	5 mL	5 mL	120842	11/18/13 20:56	DAW	TAL HOU

11

Lab Sample ID: 600-82260-40

Matrix: Solid

Matrix: Solid

Percent Solids: 93.1

Percent Solids: 98.4

Lab Sample ID: 600-82260-41 Matrix: Solid

Percent Solids: 98.6

Lab Sample ID: 600-82260-42

Lab Sample ID: 600-82260-43

Lab Sample ID: 600-82260-44

Matrix: Solid

Matrix: Solid

Matrix: Solid

Percent Solids: 95.5

Percent Solids: 97.6

Client Sample ID: SKU936-02-10

Date Collected: 11/04/13 11:50 Date Received: 11/07/13 07:01

oate Received	: 11/07/13 07:0)1							Percent	Solids: 97.
-	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			10 g	200 mL	120604	11/08/13 12:17	MHT	TAL HOU
Total/NA	Analysis	8015B		1	10 g	200 mL	120915	11/12/13 11:10	MHT	TAL HOU
Total/NA	Prep	5030B			10 g	10 mL	120602	11/07/13 16:10	MHT	TAL HOU
Total/NA	Analysis	8021B		1	10 g	10 mL	121143	11/16/13 02:10	MHT	TAL HOU
Total/NA	Prep	3550B			30.01 g	1.0 mL	120105	11/11/13 09:58	LMB	TAL HOU
Total/NA	Analysis	8015B		1	30.01 g	1.0 mL	120365	11/13/13 03:09	JPS	TAL HOU
Total/NA	Analysis	Moisture		1			119895	11/07/13 13:58	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	120664	11/15/13 10:30	KRD	TAL HOU
Soluble	Analysis	9056		1	5 mL	5 mL	120842	11/18/13 21:12	DAW	TAL HOU

Client Sample ID: SKU936-02-15

Date Collected: 11/04/13 11:52 Date Received: 11/07/13 07:01

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			10 g	200 mL	120604	11/08/13 12:17	MHT	TAL HOU
Total/NA	Analysis	8015B		1	10 g	200 mL	120915	11/12/13 12:14	MHT	TAL HOU
Total/NA	Prep	5030B			10 g	10 mL	120602	11/07/13 16:10	MHT	TAL HOU
Total/NA	Analysis	8021B		1	10 g	10 mL	121143	11/16/13 02:32	MHT	TAL HOU
Total/NA	Prep	3550B			30.06 g	1.0 mL	120105	11/11/13 09:58	LMB	TAL HOU
Total/NA	Analysis	8015B		1	30.06 g	1.0 mL	120365	11/13/13 03:41	JPS	TAL HOU
Total/NA	Analysis	Moisture		1			119895	11/07/13 13:58	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	120664	11/15/13 10:30	KRD	TAL HOU
Soluble	Analysis	9056		1	5 mL	5 mL	120842	11/18/13 21:58	DAW	TAL HOU

Client Sample ID: SKU936-02-20 Date Collected: 11/04/13 11:54 Date Received: 11/07/13 07:01

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Ргер Туре	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			10 g	200 mL	120604	11/08/13 12:17	MHT	TAL HOU
Total/NA	Analysis	8015B		1	10 g	200 mL	120915	11/12/13 12:39	MHT	TAL HOU
Total/NA	Prep	5030B			10 g	10 mL	120602	11/07/13 16:10	MHT	TAL HOU
Total/NA	Analysis	8021B		1	10 g	10 mL	121143	11/16/13 02:54	MHT	TAL HOU
Total/NA	Prep	3550B			30.01 g	1.0 mL	120105	11/11/13 09:58	LMB	TAL HOU
Total/NA	Analysis	8015B		1	30.01 g	1.0 mL	120365	11/13/13 04:14	JPS	TAL HOU
Total/NA	Analysis	Moisture		1			119895	11/07/13 13:58	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	120664	11/15/13 10:30	KRD	TAL HOU
Soluble	Analysis	9056		1	5 mL	5 mL	120842	11/18/13 22:45	DAW	TAL HOU

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Certification Summary

Client: ARCADIS U.S., Inc. Project/Site: HES Transfer Sites, Lea County NM

TestAmerica Job ID: 600-82260-1

Laboratory: TestAmerica Houston

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0759	08-04-14
Louisiana	NELAP	6	30643	06-30-14
Oklahoma	State Program	6	9503	08-31-13 *
Texas	NELAP	6	T104704223	10-31-14
USDA	Federal		P330-08-00217	04-01-14
Utah	NELAP	8	TX00083	10-31-13 *

* Expired certification is currently pending renewal and is considered valid.

Tess≛America Houston 6310 Romway Street Houston, TX 77040 Phone (713) 690-4444 Fax (713) 690-5646			Chain	Chain of Custody Reco	Gecol			,
Client Information	Sampler MELLSA	A PWAN	<u>a x</u>	Lab PM: Kudchadkar, Sachin G	600-82260 C	600-82260 Chain of Custody	puu-ZJD95-8666.1	
Client Contact Mr. Jonathan Olsen	Phone: 713 953	534800	<u>ш́</u>	E-Mail: sachin.kudchadkar@testamericainc.com	nericainc.com	L L	Page: Page ∱of Š	
Company: ARCADIS U.S., Inc.					Analysis Requested	OC.	ob #:	
Address: 2929 Briarpark Drive Suite 300	Due Date Requested:	11				<u>d</u>	č	
City: Houston	TAT Requested (days):	ł						
State, Zp. TX, 77042							D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3	 5
Prone: 713 953480	Por#: Purchase Order Requested	Requested		(o			.0	03 scahydrate
Email: jonathan.olsen@arcadis-us.com	# 0M							
Project Name: HES Transfer Sites, Lea County NM	Project #: 60004633				ທ		K - EU (A W - ph 4-5 L - EDA Z - other (spe	cify)
she. SKRLY UNIT 976	SSOW#:			Y) asi	272		Other	
	Comple Date	Sample (C=	Sample Matrix Type (w=water, (C=comp, o=wateroid,	0168_GRO 966_28D - Chic 966_28D - Chic 9768_DRO	хэтв-өгсо] ~МП2А	rədmuN Isto		
	-{	1-	Preservation Code:					-allo
B SKIA936-00-15	11413	1030	Solid	XXX	XX		Aud	
SK11934 -06-20	11/4/13		Solid	XXX	× , ×		Charl	
2541936 -06-25	11/1/13	1034	Solid		XX		thu	
SKU936-07-02	11/11/13	hall	Solid	XXX	XX		taro	
SKN936-07-05	14413	1106	Solid	N N N	XX		(Thot)	
Sturgalo 07-10	11/11/13	1108	Solid	XXXI	XX		CITCH	
Study6 -07-15	in/d/13	1110	Solid	XXX	XX		Holo	
02-LO- 766M78	11/4/13	6111	Solid	XXX	× ×		thub	
SK49310 -07-25	in H113	1114	Solid	XXXIII	XX		Anat	
SKN936-08-02	n 5 13	503	Solid	XXX	XX			
SKN936-08-05	11 s/13	1015 1	Solid	X X X	X X			
Rossible Hazard Identification	Poison B	unRadiologica.	loaical	Sample Disposal	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	f samples are retained lon; Lab	l longer than 1 month) e For Months	
				Special Instruction	Special Instructions/QC Requirements:	1		
Empty Kit Relinquished by:		Date:		Time:	A Metho	Method of Shipment:		
Reinquished by:	Date/Time:	430	Company	Received by	MMM	Date/Time	701 Company	E
5	Date/Time:) }	Company	Received by		Date/Time	Company	
Relinquished by:	Date/Time:		Company	Received by		Date/Time:	Company	
Custody Seals Intact: Custody Seal No.:			-	Cooler Temperatu	Cooler Temperature(s) °C and Other Remarks:		-	
				1	1 1			
				4	0		0 4 4 0 4 0	2

Testimerica Houston 6310 Rothway Street Houston, TX 77040

Chain of Custody Record

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Phone (713) 690-4444 Fax (713) 690-5646					
Client Information	Sampler: MEULSA PINAN	Lab PM: Kudchadkar, Sachin	U	Carrier Tracking No(s): COC No: 600-23595-8666.1	366.1
Client Contact Mr. Jonathan Olsen	Phone: 113 953 4800	E-Maii: sachin.kudcha	E-Maii: sachin.kudchadkar@testamericainc.com	Page:	
Company: ARCADIS U.S., Inc.			Analysis Requested	Job #.	
Address: 2929 Briarpark Drive Suite 300	Due Date Requested:			Preservation Codes	Codes:
City: Houston	TAT Requested (days):			A - HCL B - NaOH C - Zn Acetate	м - нехале N - None O - AsNaO2
State, Zip: TX, 77042	CANDARD			D - Nitric Acid E - NaHSO4	P - Na204S Q - Na2S03
Phone 119 953 4800	PO#. Purchase Order Requested			F - MECH G - Amchlor H - Ascorbic Acid	K - NaZSZSU3 S - H2SO4 d T - TSP Dodecahydrate
Emait. Jonathan.olsen@arcadis-us.com	WO #;				U - Acetone V - MCAA
Project Name: HES Transfer Sites, Lea County NM	Project #. 60004633		ମା		vv - pn 4-5 Z - other (specify)
sies Skelly UNIT 930	SSOW#.			of col	
	Sample Type Sample (C=comp.	Matrix (w=water, s=solid, O=waste/oli, D=waste/oli,	168_080 - Слы 168_680 - Слы 218- 8тех 218- 8тех 218- 8тех 218- 8тех 218- 250 218- 2	redmuN Ist	;
- Sample Identification	4	ation Code: XX	²⁰⁸ z		Special Instructions/Note:
G SKN9310-04-20	11/5/13 958 G		× ×	Anot	
2 CUN9310 - (14-75	11/5/13 1000	Solid	X X X X		
	rici ci/h/ii	Solid			
SW1976-05-05	MH13 1319	Solid	XXXXXXX	-	
		Solid	k k k k k		
1		Solid	XXXXX		
Skungle -05-20	11/4/13 1325	Solid			
)	1/4/13 1327	Solid	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX		
-010-0	11/11/3 1024	Solid	X X X X X X		
SKU93U - 06-05		Solid	XXXXX		
5kuazu -06-10	11/4/13 1026 V	Solid	(XXXX)	$\boldsymbol{\epsilon}$	
Possible Hazard Identification	Poison B Unknown Radiological		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	If samples are retained longer tha y Lab	1 month) Months
Deliverable Requested: I, II, III, IV, Other (specify)			Special Instructions/QC Requirements:		
Empty Kit Relinquished by:	Date:	Time:	\	Method of Shipment	
Relinquished by:	Date/Time: 11/5/13 43/0	Company	Received by V V V MM	IOL SINAMAN DE	Company
Relinquished by		Company	Received by W 1 .	Date/Timé:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time.	Company
Custody Seals Intact: Custody Seal No.: Δ Yes Δ No		3	Cooler Temperature(s) ^a C and Other Remarks:		
			10 12 13		

Chain of Custody Record

.TestAmerica Houston 6310 Rothway Street Houston, TX 77040

rrouscuit, 17 / 7 / 040 Phone (713) 690-4444 Fax (713) 690-5646	-				
Client Information	Sampler MELICA PHAN	Kudch	adkar, Sachin G	Carrier I racking No(s):	600-23595-8666.1
Client Contact: Mr. Jonathan Olsen	Phone: 713 953 4800	(E-Mait: sachin.kudchadkar@testamericainc.com		Page: ⊅of S
Company: ARCADIS U.S., Inc.	•		Analysis Requested	uested	Job #
Address: 2929 Briarpark Drive Suite 300	Due Date Requested:				-O
City: Houston	TAT Requested (days):				B - NAOH N - None C - Zn Acetate O - AsNaO2
State, Zip: TX, 77042	STANUNAIS		· · · · · · ·		
Phone: 7139534500	PO#. Purchase Order Requested		(0		
Emait: jonathan.olsen@arcadis-us.com	# OM			1.2	1 - Ice J - Di Water ע החדי
Project Name: HES Transfer Sites, Lea County NM	Project #: 60004633		TO 26	ənistn	L-EDA
SKELUN UNIT 936	SSOW#:		VSD (Y	. 01 COI	Other:
Hample Identification	Semple Date Time G	Sample Matrix Type Second (C=comp, C=comp, C=result, A=Air)	КЗДИ – D 80518- ВТЕХ 8018В_ВРС 9066_28D - СИ 8018В_ВСО 8018В_ВСО 8018В_ВСО 8018В_ВСО 8018В_ВСО 8018В_ВСО 8018В_ВСО 8018В_ВСО 8018В_ВСО 8018В_ВСО 8018В_ВСО 8018В_ВСО 8018В_ВСО 8018В_ВСО 80518- 8051		Special Instructions/Note:
	X	- ind	v v v		
Revugalo-02-25	11/13 1156	G solid			Cutton ON Critter
ESKU936-03-02	11/11/13 1240	Solid)
BSILIA310-03-05	2h21 21/h/m	Solid	XXXX		
Skupsu -03-10	11/4/13 12/4	Solid			
SKN 936 -03-15	0121 EN/20/11	Solid			
SKU936-03-20	11/4/13 1248	Solid	X X X X X		
SKU936-03-25	1250 I250	Solid	$\chi \chi \chi \chi$		->
SKN 936-04-02	11/5/13 950	Solid	XXXXX		HOLD
SU1931 -04-05	N 5/13 952	Solid	XXXXX		
SKU936-04-10	115/13 954	Solid	XXXXX		
SKN 936-04-15	wiste 9520	V Solid	χ χ χ χ		>
Possible Hazard Identification	Poison B Unknown Radiological	logical	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	assessed if samples are retain Disposal By Lab	stained longer than 1 month) Archive For Months
V, Other (specify)			Requirem		
Empty Kit Relinquished by:	Date:		Time: // N	Method of Shipment:	
Relinquished by:	Date/Time: 11/5/13 430	Company			3 10 Company
Delinquished by:	Date/Time:	Company	Received to the second se	Date/Time	CompáNy
Celinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact Custody Seal No.:			Cooler Temperature(s) [°] C and Other Remarks:	narks:	

שוווי – אושוווי אין שריפה אין אי אראייזער ען יינישיי (אין אראיזער אין איזעראין איזעראיא און איזער איז איזעראי אווויין איזער איזעראין אין איזעראין איזעראין איזעראין איזעראין איזעראין איזעראין איזעראין איזעראין איזעראין איז

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Chain of Custody Record

TestAmerica Houston 6310 Rothway Street Houston TX 77040

Houston, 1X / /040 Phone (713) 690-4444 Fax (713) 690-5646					
Client Information	Sampler: MEUISA PHAN	AN	Lab PM ⁻ Kudchadkar, Sachin G	Carrier Tracking No(s):	COC No: 600-23595-8666.1
Client Contact Mr. Jonathan Olsen	Phone: 713953480	R	E-Mail. sachin.kudchadkar@testamericainc.com		Page of S
Company ARCADIS U.S., Inc.			Analysis Requested	tequested	Job#.
Address: 2929 Briarpark Drive Suite 300	Due Date Requested:				ō
City. 'Houston	TAT Requested (days):			· · · · · · · · · · · · · · · · · · ·	B - NaOH N - None C - Zn Acetate O - AsNaO2
State, Zp. 1TX, 77042	OTHANAIS		· · · · · · · · · · · · · · · · · · ·		D - Nitric Acid P - Na204S E - NaHSO4 Q - Na2SO3 E MACH D NA2SO3
Phone. 7134534800	Po# Purchase Order Requested		(0		F - MeOn K - Na22203 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate
Emait: jonathan.olsen@arcadis-us.com	,# OM				I - Ice J - DI Water ע החדי
Project Name. HES Transfer Sites, Lea County NM	Project #: 60004633		10 S9		
STELLY UNIT 930	SSOW#.		Y) OSM	· · · · · · · · · · · · · · · · · · ·	Other:
enteritication	Sample Date Time	Sample Matrix Type (w=water, c=comp, o=wateroil, G=crah) o=wateroil,	דופול דוופרפל ספרלסידה MS/N 10168_28D - כ'הו 10168_28D - כ'הו 10168_28D - כ'הו 10168_28D - כ'הו		19dmuN Ista Snerial Instructions/Note
	Γ	- σ			
20-10-012bn25	11/4/13 1357	G Solid	XXX	×	Croft-LONG ARTHON
ESKU936-01-05	11/41/13 1400		Solid X X X X X		
85ku936-01-10	in/4/13 1402	Solid			
SKU936-01-15	11/4/13 1/404	So	Solid X X X X X		
SKU9310-01-20	N/4/13 14000	Solid	lid X X X Y X		
SKN936-01-25	00711 E111/11	So	solid X X X X		
20-20-02-02-02	in/4/13 11460	So	solid X X X X X		
	GH11 E1/1/11	So	solid XXXX		
SKN936-02-10	11/9/13 1150	So	Solid X X X X X		
5KU936-02-15	11/19/13 1152	Ŝ	Solid X X X X X		
SKU936-02-20	11/4/13 1154	_ ^	Solid X X X X X		\checkmark
Possible Hazard Identification	Poison B] Radiological	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) Esturn To Client Disposal By Lab	e assessed if samples are reta	stained longer than 1 month) Archive For Months
Délivèrable Requested: I, II, III, IV, Other (specify)		0	Special Instructions/QC Requirements:		
Empty Kit Relinguished by:	Date:		Time:	Method of Shipment:	
Relinquished by: Weell A	Date/Time/5/13 430			M/ Date/Time	3701 Companyor
Rainquished by (Date/Time:	Company	ny Received by:	beter Date Tinter	Company
Inquished by:	Date/Time:	Company	ny Received by:	Date/Time:	Company
Custody Seals Intact Custody Seal No.: Δ Yes Δ No			Cooler Temperature(s) °C and Other Remarks:	r Remarks:	
			1	1	
			3		

TestAmerica Houston 6310 Rothway Street Houston, TX 77040

Chain of Custody Record

Houston, TX 77040 Phone (713) 690-4444 Fax (713) 690-5646					
Client Information	Sampler. MEUISH PHAN	Lab PA Kudci	Lab PM: Kudchadkar, Sachin G	Carrier Tracking No(s):	COC No: 600-23595-8666.1
Client Contact. Mr. Jonathan Olsen	Phone: 713953480	E-Mail: sachi	E-Maii: sachin.kudchadkar@testamericainc.com		Page: Page Sof S
Company: ARCADIS U.S., Inc.			Analysis Rec	Requested	Job #:
Address: 2929 Briarpark Drive Suite 300	Due Date Requested:				Preservation Codes:
Crty: Houston	TAT Requested (days):				
State, Zip: TX, 77042					D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 E - Ma⊃H R - Na2SS2SO3
Phone 13 953 USDD	PO #. Purchase Order Requested		(0		σ
Email: jonathan.olsen@arcadis-us.com	# OM		(on	SJ	I - Ice J - DI Water K EDT *
Project Name. HES Transfer Sites, Lea County NM	Project #: 60004633		10 S9,		L-EDA
Stelly UNIT ABU	SSOW#:		oride oride	. 01 COI	Other:
	Sample Type Sample (C=comp.	Matrix (w=water, s=solid, O=waste/oli,	ield Filtered orse_28D - Chi 015B_GRO 056_28D - Chi 021B-BTEX	nodmuN leio'	Snorial Instructions (Note .
		tion Code:			
SK1936-08-10	WELD ION G	Solid	×		
Stul936-08-15	W5/13 1019	Solid	XXXX		
02-80-9Ebrig	115/13 1021	Solid	$\times \times \times \times \times$		
SUN1936-08-25	N/5/13 1023	/ Solid	X X X Y Y		
		Solid			
Rossible Hazard Identification	on B _ Inknown	aical	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	assessed if samples are retain Disposal Bv Lab	stained longer than 1 month) Archive For Months
			Requirem		
Empty Kit Relinquished by:	Date:			Method of Shipment:	
Relinquished by:	Date/Time: 1115/13 430	Company	Received by:		3 JUN COMPANY
Renduciated by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact Custody Seal No.:			Cooler Temperature(s) ^o C and Other Remarks:	emarks:	
		ייין איז	11 12 13 14		

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Login Number: 82260 List Number: 1

Creator: Capps, Dana R

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.6/1.7/3.0/3.0/3.7
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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List Source: TestAmerica Houston



Attachment 6

Boring Logs (November 2013)

Dril Dril San Boi	e Star ling (ling M npling rehole script	Comp Netho g Met e Dei	oany: od: ^A thod: oth:	Har Air Ro Sho 25' b	rison otary ovel qs		Cooper Inc	Well/Boring ID: SKU936-01 Client: Chevron EMC Location: Skelly Unit 936
DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description
_								
	0		AK					AIR KNIFE only -2 inches
F	_				3.3		δX	SANDY CLAY, Reddish Brown (5YR4/4) to Pink (7.5YR8/3), hard to medium, little subrounded nodules, poorly sorted, 3 mm to 7 mm, moist.
- -	-	1	AR	5	4.4			SANDY CALICHE, Reddish Brown (5YR4/4) to Yellowish Red (5YR5/6), medium grained, trace rounded nodules, poorly sorted, 2 mm to 5 mm, moist, medium to soft, chalky to sandy.
- 5 - -	-5 -	2	AR	5	3.8			Same as above, Yellowish red (5YR5/6), soft.
- 10 - -	-10 -	3	AR	5	3.0	×		Same as above, Light Reddish Brown (5YR6/4) to Pink (7.5YR8/3), trace rounded nodules, 1 mm to 3 mm, fine grained, dry, chalky to sandy.
- 15 -	-15 - -					×		Same as above, Light Reddish Brown (5YR6/4), trace clay, low plasticity.
-	-	4	AR	5	4.5			
- 20	-20 - - - - - 25	5	AR	5	2.7	X		CLAYEY SAND, Reddish Brown (5YR5/4), fine grained, low to medium plasticity, trace rounded caliche nodules, poorly sorted, 2 mm to 4 mm, moist.



Dril Dril San Bo	e Sta ling (ling I npling rehol script	Comp Metho g Met e Dej	oany: od: ^A thod: oth:	Har Air Ro Sho 25' b	otary ovel gs	} and (Cooper Inc	Well/Boring ID: SKU936-02 Client: Chevron EMC Location: Skelly Unit 936
DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description
0	0							
			AK				$\Theta \times$	AIR KNIFE only ~2 inches
-	_				5.1			SANDY CLAY, Reddish Brown (5YR4/4) to Pinkish White (7.5YR8/2), hard, trace, subrounded to rounded nodules of caliche, poorly sorted, 4 mm to 6 mm, moist, sandy, low plasticity.
-	-	1	AR	5	4.6	×		SANDY CLAY, Yellowish Red (5YR5/6), medium, moist, low plasticity, chalky to sandy.
	-5 - - - -	2	AR	5	5.3	×		SANDY CALICHE, Light Reddish (5YR6/4), White (5YR8/1) to Light Gray (5YR7/1), trace subrounded to subangular nodules, poorly sorted, 2 mm to 8 mm, medium grained, dry, sandy.
-	-10 -	3	AR	5	3.6	×		Same as above, Pink (7.5YR7/4), fine to medium grained, dry, soft, chalky.
- 15	-	4	AR	5	7.8			Same as above, Reddish Brown (5YR5/4), trace subangular to subrounded nodules, poorly sorted, 3 mm to 9 mm, fine grained, chalky.
- 20 - - - 25	-20 - - - - - -25 -	5	AR	5	5.9	×		CLAYEY SAND, Reddish Brown (5YR5/4), little subrounded to rounded, fine to very fine grained, medium plasticity.



Dril Dril San Boi	e Star ling (Iing M npling rehole script	Comp Netho g Met e Dei	oany: od: ^A hod: oth:	Har air Ro Sho 25' b	rison otary ovel gs	3 and (Cooper Inc	Well/Boring ID: SKU936-03 Lient: Chevron EMC Location: Skelly Unit 936
DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description
	0		AK				\bigcirc	AIR KNIFE only ~2 inches
F	-				3.7			SANDY CLAY, Yellowish Red (5YR5/6), hard, moist, medium grained, low plasticity.
F	-					×		
-	-	1	AR	5	2.5			
5 - -	-5 -	2	AR	5	4.3			SANDY CALICHE, Reddish Brown (5YR5/4), Light Gray (5YR7/1) to White (5YR8/1), medium sands, dry, trace subrounded caliche nodules, well sorted.
- 10	-10 -	3	AR	5	7.0	X		Same as above, Light Reddish Brown (5YR6/4), to White (5YR8/1), fine to medium grained.
- 15 - - - - 20	-15	4	AR	5	7.8	X		Same as above, Reddish Yellow (5YR6/6), fine grained, trace subrounded to rounded caliche nodules, poorly sorted, 2 mm to 7 mm.
- 25	-20 - - - - -25 -	5	AR	5	8.9	X		CLAYEY SAND, Reddish Brown (5YR5/4), Light Gray (5YR7/1), to White (5YR8/1), fine grained, moist, trace rounded caliche nodules, poorly sorted, 1 mm to 4 mm, medium plasticity.



Dril Dril San Bo	e Star ling C ling M npling rehole script	Comp Netho Met Met e Der	oany: od: ^A hod: oth:	Har air Ro Sho 25' b	rison otary ovel gs		Cooper Inc	Well/Boring ID: SKU936-04 c./K Cooper Client: Chevron EMC Location: Skelly Unit 936
рертн	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description
			AK				\bigcirc	AIR KNIFE only -2 inches
-	_				2.1		$\bigcirc \times$	SANDY CLAY, Reddish Brown (5YR4/4) to White (5YR8/1), medium grained, trace rounded nodules, 4 mm to 6 mm, poorly sorted, moist, low plasticity.
-	-5 -	1	AR	5	2.0			
-	-	2	AR	5	3.2			SANDY CLAY, Yellowish Red (5YR5/6) to Pinkish White (5YR8/2), medium grained, trace caliche, 1 mm to 7 mm, some clay, medium plasticity, moist.
-	-10	3	AR	5	8.5			SANDY CALICHE, Yellowish Red (5YR5/6), Pink (5YR8/3), to Light Gray (5YR7/1), medium grained, some fractured caliche, subrounded to subangular, 1 mm to 11 mm, hard, dry, chalky.
-	-15	4	AR	5	9.0	X		CLAYEY SAND, Reddish Brown (5YR5/4) to Pinkish White (5YR8/2), fine to medium grained, trace caliche, some clay, hard, moist, high plasticity.
- 20 - - - - - -	-20 - - - - -25	5	AR	5	9.5	X		Same as above, Yellowish Red (5YR5/6), fine grained, medium plasticity, moist.



Attachment 7

Chloride Multimedia Exposure Assessment Model Simulated Soil Screening Levels for the Protection of Groundwater Memo



MEMO

To: Kegan Boyer, Chevron Environmental Management Company ^{Copies:} Chris Shepherd, ARCADIS Kathleen Abbott, ARCADIS David Evans, ARCADIS

From: Jonathan Olsen

Date: May 8, 2014

ARCADIS Project No.: B0048615.0000

Subject: Chloride Multimedia Exposure Assessment Model Simulated Soil Screening Levels for the Protection of Groundwater HES Transfer Sites, Lea County, New Mexico

On behalf of Chevron Environmental Management Company, ARCADIS U.S., Inc. (ARCADIS) evaluated chloride remediation action levels for use at the Health Environmental Safety (HES) Transfer Sites near Hobbs, New Mexico. The New Mexico Oil Conservation District (NMOCD) has established soil screening levels (SSLs) for fluid management pits (also known as the "NMOCD PIT RULE" [NMAC 19.15.17]); however, no formal SSLs have been established by the NMOCD or the New Mexico Environmental Department (NMED) for surface releases of production water. The Risk Assessment Guidance for Investigation and Remediation (NMED 2012) states that SSLs should be based on risk to human health and the potential migration to groundwater with respect to the NMED-specific tap water SSL. Chloride is not considered hazardous and the NMED and the United States Environmental Protection Agency (USEPA) have not established tap water screening levels for chloride. However, the NMED has established a chloride standard for groundwater (NMAC 20.6.2.1101) of 250 milligrams per liter (mg/L). Therefore, the SSL for chloride should be based on the soil leaching to groundwater pathway.

To evaluate a chloride SSL for use at the HES Transfer Sites, ARCADIS performed simulations of unsaturated zone flow, transport, and saturated zone mixing of chloride using the Multimedia Exposure Assessment Model Version 2.0 (MULTIMED; USEPA 1996) to evaluate the potential migration of chloride in shallow soil through the unsaturated zone to the underlying groundwater. The initial simulations were intended to estimate a maximum allowable chloride soil concentration (site SSL) to evaluate HES Transfer

ARCADIS U.S., Inc. 2929 Briarpark Drive Suite 300 Houston Texas 77042 Tel 713 953 4800 Fax 713 977 4620



Sites in Lea County and eastern Eddy County, New Mexico, and to develop a baseline approach for using the model for potential future evaluations of solute migration at other HES Transfer Sites in New Mexico.

MULTIMED Overview

MULTIMED was originally designed to simulate the movement of solutes leaching from a landfill to various exposure pathways. Due to its general acceptance by the NMOCD and the USEPA and its ability to simulate unsaturated and saturated zone flow and transport, MULTIMED was selected for this evaluation. The model, as designed, simulates one-dimensional vertical transport in the unsaturated zone to the saturated zone based on user-provided input parameters considering vadose zone, saturated zone, and chemical-specific characteristic parameters.

The simulations were performed using both the unsaturated and saturated zone modules available in MULTIMED. The unsaturated zone module performs solutions of the downward flow of infiltrating water to the water table by Darcy's Law:

$$Q = -K_v \cdot K_{rw} \left(\frac{\delta \psi}{\delta z}\right)$$

Where:

 ψ is the pressure head (meters [m]) z is the depth (m) Kv is the saturated hydraulic conductivity (meters per year [m/year]) Krw is the relative hydraulic conductivity

The boundary condition at the water table is:

 $\psi \cdot L = 0$

Where:

L is the thickness of the unsaturated zone (m)

In the unsaturated zone, it is necessary to specify the relationship between relative hydraulic conductivity, pressure head, and water saturation. This relationship is given by van Genuchten (1976):

$$S_e = \theta r + \frac{\theta s - \theta r}{\left[1 + (\alpha \psi^{\beta})^{\gamma}\right]}$$

Where:

- θr and θs are the residual water saturation and total water saturation (dimensionless), respectively
- β , γ , α are empirical soil-specific parameters (dimensionless)

 ψ is the air pressure entry head (m)

 S_e is the effective saturation (fraction)

Source area concentrations are input as leachate concentrations, therefore, the soil/water partition equation was used to convert between total soil concentration in milligrams per kilogram (mg/kg) and the leachate concentration in mg/L:

$$C_t = \frac{C_l \cdot R \cdot \theta_w}{\rho_b}$$

Where:

 C_t is the concentration of the chemical of interest in soil (mg/kg)

 C_l is the concentration of the chemical of interest in leachate (mg/L)

R is the retardation coefficient (dimensionless, assumed 1 for chloride)

 ρ_b is the bulk density of the soil (mg/L or grams per cubic centimeter)

The mass of the chemical of interest that reaches the groundwater is expressed by the simplified steadystate equation (Salhotra et al. 1995) that couples the vadose zone to the groundwater:

$$M_L = A_w \cdot Q_f \cdot C_l$$

Where:

 M_L is the chemical of interest mass that leaches from site soil (grams per year [g/year])

 A_w is the width of the source area (m²)

 Q_f is the percolation rate from the facility/site (m/year)

The mixed groundwater concentration is controlled by the quasi-three-dimensional advection dispersion equations that are evaluated based on the following chemical concentration relationship within the mixing zone (Salhotra et al. 1995):

$$C(x, y, z, t) = \frac{H}{B}C_f(x, y, t) + \Delta C_p(x, y, z, t)$$

Where:

C is the dissolved concentration (mg/L, g/m³) *x,y,z* are the spatial coordinates (m) *t* is elapsed time (year) *H* is the source zone penetration (m), with a maximum equal to *B B* is the thickness of the saturated zone (m)

MULTIMED's output concentration is a centerline concentration based on a calculated dilution attenuation factor. Thus, the output concentration is the maximum concentration of the chemical of interest in groundwater at a reasonable distance downgradient from the source area.

Model Design, Inputs, and Assumptions

The required input parameters for the MULTIMED simulations are summarized in Table 1. Input parameters include model structure, unsaturated and saturated zones, and chemical characteristics. Minimal site-specific data regarding the HES sites are available; therefore, numerous input parameters are based on published reports, default NMED values (2012), default values provided in the modeling code, and ARCADIS's experience, as indicated in Table 1. The model values are considered representative of the Lea County, New Mexico area. Due to the intended use of the SSL at multiple sites, more conservative values were generally selected for the given ranges of input parameters.

The general assumptions used in the MULTIMED model design include:

- · The unsaturated and saturated zones are a single, homogeneous material.
- The applied recharge and infiltration are constant throughout the simulation.
- Initial chloride concentrations in soil below the source area and in groundwater are equal to 0.
- · The model assumes no chemical transformation or adsorption of chloride to soil materials.

The simulations were performed using the transient model capabilities of MULTIMED. Steady-state simulations were not chosen because MUTLIMED requires the assumption that the source is continuous and constant throughout the simulation, which is not appropriate for these evaluations. Also, the transient model was selected to provide output that simulates the aquifer concentrations versus time and models a finite source.

Model Simulations and Results

Using the input parameters provided, soil concentrations for chloride were iteratively varied to arrive at an appropriate maximum allowable soil concentration that would be protective of groundwater for each of the scenarios. To calculate the maximum concentration that would be observed given the input concentrations and parameters, the simulation period selected was 1,980 years with 20-year time steps.

To ascertain the maximum allowable chloride concentration for more typical chloride concentration distribution and depth to groundwater scenarios, eight MULTIMED simulations were completed. The scenarios are summarized in Table 2. The input values for the simulations were the same, except for the thickness and width of the chloride-affected soil within the soil column. The first four simulations evaluated homogeneous chloride-affected soil 20 meters wide (400 square meters $[m^2]$) and varied the chloride-affected soil 20 meters and the depth to groundwater between 20 and 30.5 meters. The remaining four simulations evaluated homogeneous chloride-affected soil thickness between 1 meter and 3 meters and the depth to groundwater soil 45 meters wide (2,000 m²) and varied the chloride affected soil thickness between 1 meters and 30.5 meters.

The predicted groundwater concentrations versus time are illustrated on Figures 1 through 8. The peak arrival times varied between 540 and 860 years. The simulations indicate the site SSLs for the protection of groundwater ranged from 8,525 to 266,100 mg/kg (Table 2) depending on the scenario and are protective of the New Mexico chloride groundwater standard of 250 mg/L.

The MULTIMED model, like any model, requires the use of simplifying assumptions regarding subsurface conditions and flow processes that result in inherent limitations and uncertainty compared to an actual flow system. In this case, uncertainty may be related to:

- The model assumes homogeneous unsaturated and saturated zones; the actual conditions at the sites likely contain numerous heterogeneities.
- The applied recharge and infiltration rates are constant. The aquifer hydraulic gradient is also assumed to be constant. These rates likely vary with time, and these variations may influence the solute migration and mixing, resulting in short-term changes in aquifer concentrations
- The model is a theoretical simulation of transport processes and is not verified or calibrated against site-specific data.

Conclusions and Recommendations

The model simulations reasonably represent conditions encountered at most of the Lea County and eastern Eddy County HES Transfer Sites. HES Transfer Sites with chloride-affected soil can be screened

against SSLs in Table 2, assuming they meet the specified conditions (source length, source depth, depth to groundwater, and soil concentration). For calculated SSLs greater than 100,000 mg/kg, a maximum allowable soil concentration of 100,000 mg/kg is recommended in accordance with the NMED risk assessment guidance (NMED 2012). For sites that meet all of these conditions, no further action is recommended. For the sites that do not meet these conditions, site-specific evaluations should be conducted.

Enclosures:

Tables

Table 1

MULTIMED V2.0 Model Inputs

Table 2	Soil Screening Level Matrix
Figures	
Figure 1	MULTIMED Simulated Chloride Concentration vs. Time (Source = 20m, Chloride 0-1m, & Depth to Groundwater = 20m)
Figure 2	MULTIMED Simulated Chloride Concentration vs. Time (Source = 20m, Chloride 0-1m, & Depth to Groundwater = 30.5m)
Figure 3	MULTIMED Simulated Chloride Concentration vs. Time (Source = 20m, Chloride 0-3m, & Depth to Groundwater = 20m)
Figure 4	MULTIMED Simulated Chloride Concentration vs. Time (Source = 20m, Chloride 0-3m, & Depth to Groundwater = 30.5m)
Figure 5	MULTIMED Simulated Chloride Concentration vs. Time (Source = 45m, Chloride 0-1m, & Depth to Groundwater = 20m)
Figure 6	MULTIMED Simulated Chloride Concentration vs. Time (Source = 45m, Chloride 0-1m, & Depth to Groundwater = 30.5m)
Figure 7	MULTIMED Simulated Chloride Concentration vs. Time (Source = 45m, Chloride 0-3m, & Depth to Groundwater = 20m)
Figure 8	MULTIMED Simulated Chloride Concentration vs. Time (Source = 45m, Chloride 0-3m, & Depth to Groundwater = 30.5m)

References

- New Mexico Environment Department. 2012. Risk Assessment Guidance for Investigations and Remediation, Volume I. February 2012 (updated June 2012).
- Salhotra, A.M., P. Mineart, S. Sharp-Hansen, T. Allison, R. Johns, and W.B. Mills. 1995. Multimedia Exposure Assessment Model (MULTIMED 2.0) for Evaluating the Land Disposal of Wastes--Model Theory. United States Environmental Protection Agency, Athens, GA. Unpublished Report.
- United States Environmental Protection Agency. 1996. A Subtitle D Landfill Application Manual for the Multimedia Exposure Assessment Model (MULTIMED 2.0). Final Report.
- Van Genuchten, M, Th., and P.J. Wierenga. 1976. Mass Transfer Studies in Sorbing Porous Media I. Analytical Solutions. Soil Science Society of America Proceedings. v 40, 473-480.



Tables

Table 1MULTIMED V2.0 Model InputsChevron HES Transfer SitesLea County, New Mexico

Parameters	Value(s)	Units	Notes
Unsaturated Zone Flow Parameters:			
Depth of Unsaturated Zone	20.0	m	Local water levels (20m & 30.5m)
Hydraulic Conductivity	0.06	cm/hr	Texas (2011)
Unsaturated Zone Porosity	0.44	fraction	NMED (2012) Default
Residual Water Content	0.260	fraction	NMED (2012) Default
Unsaturated Zone Transport Parameters:			
Thickness of Layer	20 & 30.5	m	Regional water levels
Percent of Organic Matter	1.5%		NMED (2012) Default (not used)
Bulk Density	1.5	g/cm ³	NMED (2012) Default
Biological Decay Coefficient	0	1/yr	(not used)
Aquifer Parameters:			
Aquifer Porosity	0.43	fraction	NMED (2012) Default
Bulk Density	1.5	g/cm ³	NMED (2012) Default
Aquifer Thickness	12.0	m	NMED (2012) Default
Hydraulic Conductivity	542	m/yr	Texas (2011), Velocity ~ 1/2 NMED Default
Hydraulic Gradient	0.010	m/m	NMED (2012) Default
Organic Carbon Content	0.020	fraction	NMED (2012) Default (not used)
Temperature of Aquifer	15.0	°C	NMED (2012) Default (not used)
pH	6.2		(not used)
x-distance Radial Distance from Site to Receptor	12	m	equal to aquifer thickness
Source Parameters:			·
Infiltration Rate	0.013	m/yr	~0.5 in/yr, Texas (2011)
Area of Waste	400 & 2000	m ²	NMED (2012) Default (~45m x45m)
Recharge Rate	0.013	m/yr	Texas (2011)
Duration of Pulse	540 to 840	yr	Varied, set equal to peak arrival time
Discharge Concentrations	0	mg/L	
Initial Soil Concentrations:			·
Depth (m)			
Chloride leachate concentration 0	varied	mg/L	Calculated for each scenario ¹
Chloride leachate concentration 1 & 3	0	mg/L	
Chloride leachate concentration 20 & 30.5	0	mg/L	
Additional Parameters:			
Method	Gaussian		
New Mexico Environment Department. 2012. Ris	k Chloride		
Chemical Parameters:			
Normalized Distribution Coefficient	0.00	mL/g	Model Derived
Van Genuchten Parameters:			
Alpha Van Genuchten coefficient	0.38	unitless	NCSS Soil Characterization Data ²
Beta Van Genuchten coefficient	1.2	unitless	NCSS Soil Characterization Data ²

Notes: °C - degrees celcius

1 - calculated using the soil-water partitioning equation

2 - van Genutchen transport parameters are typical values for caliche-like material

cm³ - cubic centimeters

cm - centimeters

g - grams

hr - hour

L - liters

m - meters

m² - meter squared

- mg milligrams
- mL milliliters
- yr year

References:

NMED - New Mexico Environmental Department Risk Assessment Guidance for Site Investigations and Remediation. February 2012. NCSS - National Cooperative Soil Survey, National Cooperative Soil Characterization Database

Texas - Texas Water Development Board 2011. Update of the Groundwater Availability Model for the Edwards-Trinity (Plateau) and Pecos Valley Aquifers of Texas. January 21, 2011

Table 2Soil Screening Level MatrixChevron HES Transfer SitesLea County, New Mexico

Scenario	Source Length (m)	Source Area (m)	Source Depth (m)	Depth to Groundwater (m)	SSL _{gw} (mg/Kg)	Notes
		, <i>,</i>				NULES
	20	400	0-1	20.0	108,000	1
2	20	400	0-1	30.5	266,100	1
3	20	400	0-3	20.0	23,750	
4	20	400	0-3	30.5	45,000	
5	45	2,000	0-1	20.0	38,800	
6	45	2,000	0-1	30.5	95,500	
7	45	2,000	0-3	20.0	8,525	
8	45	2,000	0-3	30.5	16,100	

NMED SSL Ceiling = 100,000 mg/Kg

Notes:

m - meters

mg/Kg - milligrams per Kilogram

NMED - New Mexico Environmental Department

SSL_{gw} - Site soil screening levels for the migration to groundwater pathway

SSL Ceiling - Soil Screening Level Ceiling (NMED 2012)

1 - the NMED SSL ceiling should be used

References:

New Mexico Environment Department. 2012. Risk Assessment Guidance for Investigations and Remediation, Volume I. February 2012 (updated June 2012).



Figures















