

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

State of New Mexico  
Energy Minerals and Natural  
Resources Department  
Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-141  
Revised August 24, 2018  
Submit to appropriate OCD District office

Incident ID	NCS1921756251
District RP	
Facility ID	
Application ID	

## Release Notification

**NOT APPROVED**

### Responsible Party

Responsible Party: LOGOS Operating, LLC	OGRID 289408
Contact Name: Larissa Farrell	Contact Telephone (505)787-2027
Contact email: lfarrell@logosresourcesllc.com	Incident # (assigned by OCD)
Contact mailing address 2010 Afton Pl Farmington, NM 87401	NCS1921756251

### Location of Release Source

Latitude 36.8663635 Longitude -107.374640  
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Rosa Unit 267	Site Type: Well
Date Release Discovered: 7/19/2019	API# (if applicable) 30-039-25012

Unit Letter	Section	Township	Range	County
M	28	31N	5W	Rio Arriba

Surface Owner: ☐ State ☒ Federal ☐ Tribal ☐ Private (Name: \_\_\_\_\_)

### Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 15	Volume Recovered (bbls) 13
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release: Tank was recently replaced and the dump valve was left open. Fluid spilled into the secondary containment and began saturating the ground outside the containment.

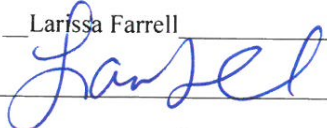
State of New Mexico  
Oil Conservation Division

Incident ID	
District RP	
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Was this a major release as defined by 19.15.29.7(A) NMAC?  <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release?   
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?   	

**Initial Response**

*The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury*

<input checked="" type="checkbox"/> The source of the release has been stopped.	
<input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment.	
<input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.	
<input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why:   	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD 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 OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Larissa Farrell</u>	Title: <u>Env/Reg Technician</u>
Signature: <u></u>	Date: <u>7/23/19</u>
email: <u>lfarrell@logosresourcesllc.com</u>	Telephone: <u>(505)787-2027</u>
<b><u>OCD Only</u></b>	
Received by: _____	Date: _____

Incident ID	
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## Site Assessment/Characterization

*This information must be provided to the appropriate district office no later than 90 days after the release discovery date.*

What is the shallowest depth to groundwater beneath the area affected by the release?	<u>240</u> (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas <b>not</b> on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

### **Characterization Report Checklist:** *Each of the following items must be included in the report.*

- ☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- ☒ Field data
- ☒ Data table of soil contaminant concentration data
- ☒ Depth to water determination
- ☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
- ☒ Boring or excavation logs
- ☒ Photographs including date and GIS information
- ☒ Topographic/Aerial maps
- ☒ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.



Form C-141

State of New Mexico  
Oil Conservation Division

Page 4

Incident ID	
District RP	
Facility ID	
Application ID	

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD 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 OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Larissa Farrell Title: Env/Reg TechnicianSignature:  Date: 11/7/19email: lfarrell@logosresourcesllc.com Telephone: (505)787-2027**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_



Form C-141

State of New Mexico

Page 6

Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

## Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

**Closure Report Attachment Checklist:** *Each of the following items must be included in the closure report.*

- ☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- ☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- ☒ Laboratory analyses of final sampling (Note: appropriate OCD District office must be notified 2 days prior to final sampling)
- ☒ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD 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 OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Larissa Farrell Title: Env/Reg Technician

Signature:  Date: 11/7/19

email: lfarrell@logosresourcesllc.com Telephone: (505) 787-2027

### OCD Only

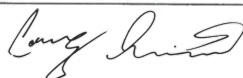
Received by: \_\_\_\_\_ Date: \_\_\_\_\_

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: \_\_\_\_\_

Printed Name: \_\_\_\_\_ Title: \_\_\_\_\_

**NOT APPROVED**



1/3/20



2010 Afton Place  
Farmington, NM 87401  
Phone: (505) 324-4145  
Fax: (505) 326-6112

November 7, 2019

Cory Smith  
New Mexico Oil Conservation Division  
1000 Rio Brazos Road  
Aztec, NM 87410  
RE: Rosa Unit 267 Release (nCS1921756251)

The release at the Rosa Unit 267 was discovered on July 19, 2019. LOGOS Operating (LOGOS) immediately shut in the well and dispatched a water truck to pull the fluid from the affected area. Approximately 15 bbls were released from the valve that was left open on the new tank that replaced the old tank. The secondary containment is not lined and fluid began seeping under the metal berm and left the location area on the southwest corner of the pad. LOGOS was able to recover 13 bbls of fluid from the secondary containment. There is a cathodic well on the well pad that depicts groundwater at 240' below surface. Gypsum was raked into the gravel in the secondary containment. LOGOS sampled the area on October 08, 2019 with the witness of NM Oil Conservation Division. The analytical results showed that the Table I closure criteria was met. As per NMAC 19.15.29.13 (D)(1), the chloride concentrations were above the reclamation standards. On October 24, 2019 LOGOS delineated the affected area down to 2' bgs and results showed the chloride and TPH concentrations were below the standards listed in 19.15.29.13 (D)(1).

Sincerely,

Larissa Farrell  
Environmental/Regulatory Technician



## Analytical Report

### Report Summary

Client: Logos Operating, LLC

Samples Received: 10/8/2019

Job Number: 12035-0114

Work Order: P910031

Project Name/Location: Rosa 267

Report Reviewed By:

A handwritten signature in blue ink, reading 'Walter Hinchman'.

Date: 10/11/19

Walter Hinchman, Laboratory Director



Envirotech Inc. certifies the test results meet all requirements of TNI unless footnoted otherwise.  
Statement of Data Authenticity: Envirotech, Inc. attests the data reported has not been altered in any way.  
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Envirotech, Inc. holds the Utah TNI certification NM009792018-1 for the data reported.  
Envirotech, Inc. holds the Texas TNI certification T104704557-19-2 for the data reported.





Logos Operating, LLC  
PO Box 18  
Flora Vista NM, 87415

Project Name: Rosa 267  
Project Number: 12035-0114  
Project Manager: Larissa Farrell

**Reported:**  
10/11/19 16:32

### Analytical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
Rosa 267-SS1	P910031-01A	Soil	10/08/19	10/08/19	Glass Jar, 4 oz.
	P910031-01B	Soil	10/08/19	10/08/19	Glass Jar, 4 oz.

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Logos Operating, LLC	Project Name:	Rosa 267	
PO Box 18	Project Number:	12035-0114	
Flora Vista NM, 87415	Project Manager:	Larissa Farrell	<b>Reported:</b> 10/11/19 16:32

**Rosa 267-SS1  
P910031-01 (Solid)**

Reporting									
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

**Volatile Organics by EPA 8021**

Benzene	ND	0.0250	mg/kg	1	1941027	10/09/19	10/10/19	EPA 8021B	
Toluene	ND	0.0250	mg/kg	1	1941027	10/09/19	10/10/19	EPA 8021B	
Ethylbenzene	ND	0.0250	mg/kg	1	1941027	10/09/19	10/10/19	EPA 8021B	
p,m-Xylene	ND	0.0500	mg/kg	1	1941027	10/09/19	10/10/19	EPA 8021B	
o-Xylene	ND	0.0250	mg/kg	1	1941027	10/09/19	10/10/19	EPA 8021B	
Total Xylenes	ND	0.0250	mg/kg	1	1941027	10/09/19	10/10/19	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		91.7 %		50-150	1941027	10/09/19	10/10/19	EPA 8021B	

**Nonhalogenated Organics by 8015 - DRO/ORO**

Diesel Range Organics (C10-C28)	291	25.0	mg/kg	1	1941026	10/09/19	10/09/19	EPA 8015D	
Oil Range Organics (C28-C40)	754	50.0	mg/kg	1	1941026	10/09/19	10/09/19	EPA 8015D	
Surrogate: n-Nonane		116 %		50-200	1941026	10/09/19	10/09/19	EPA 8015D	

**Nonhalogenated Organics by 8015 - GRO**

Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1941027	10/09/19	10/10/19	EPA 8015D	
Surrogate: 1-Chloro-4-fluorobenzene-FID		88.5 %		50-150	1941027	10/09/19	10/10/19	EPA 8015D	

**Anions by 300.0/9056A**

Chloride	699	40.0	mg/kg	2	1941028	10/09/19	10/09/19	EPA 300.0/9056A	
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Logos Operating, LLC  
PO Box 18  
Flora Vista NM, 87415

Project Name: Rosa 267  
Project Number: 12035-0114  
Project Manager: Larissa Farrell

Reported:  
10/11/19 16:32

### Volatile Organics by EPA 8021 - Quality Control

#### Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### Batch 1941027 - Purge and Trap EPA 5030A

##### Blank (1941027-BLK1)

Prepared: 10/09/19 1 Analyzed: 10/11/19 0

Benzene	ND	0.0250	mg/kg							
Toluene	ND	0.0250	"							
Ethylbenzene	ND	0.0250	"							
p,m-Xylene	ND	0.0500	"							
o-Xylene	ND	0.0250	"							
Total Xylenes	ND	0.0250	"							
Surrogate: 4-Bromochlorobenzene-PID	7.57		"	8.00		94.6	50-150			

##### LCS (1941027-BS1)

Prepared: 10/09/19 1 Analyzed: 10/11/19 0

Benzene	5.17	0.0250	mg/kg	5.00		103	70-130			
Toluene	5.15	0.0250	"	5.00		103	70-130			
Ethylbenzene	5.13	0.0250	"	5.00		103	70-130			
p,m-Xylene	10.3	0.0500	"	10.0		103	70-130			
o-Xylene	5.16	0.0250	"	5.00		103	70-130			
Total Xylenes	15.4	0.0250	"	15.0		103	70-130			
Surrogate: 4-Bromochlorobenzene-PID	7.57		"	8.00		94.6	50-150			

##### Matrix Spike (1941027-MS1)

Source: P910027-01

Prepared: 10/09/19 1 Analyzed: 10/11/19 0

Benzene	4.91	0.0250	mg/kg	5.00	ND	98.2	54.3-133			
Toluene	4.89	0.0250	"	5.00	ND	97.8	61.4-130			
Ethylbenzene	4.87	0.0250	"	5.00	ND	97.5	61.4-133			
p,m-Xylene	9.77	0.0500	"	10.0	ND	97.7	63.3-131			
o-Xylene	4.88	0.0250	"	5.00	ND	97.6	63.3-131			
Total Xylenes	14.6	0.0250	"	15.0	ND	97.6	63.3-131			
Surrogate: 4-Bromochlorobenzene-PID	7.16		"	8.00		89.6	50-150			

##### Matrix Spike Dup (1941027-MSD1)

Source: P910027-01

Prepared: 10/09/19 1 Analyzed: 10/11/19 1

Benzene	5.02	0.0250	mg/kg	5.00	ND	100	54.3-133	2.16	20	
Toluene	4.99	0.0250	"	5.00	ND	99.8	61.4-130	1.94	20	
Ethylbenzene	4.96	0.0250	"	5.00	ND	99.1	61.4-133	1.65	20	
p,m-Xylene	9.89	0.0500	"	10.0	ND	98.9	63.3-131	1.27	20	
o-Xylene	4.99	0.0250	"	5.00	ND	99.7	63.3-131	2.18	20	
Total Xylenes	14.9	0.0250	"	15.0	ND	99.2	63.3-131	1.58	20	
Surrogate: 4-Bromochlorobenzene-PID	7.61		"	8.00		95.1	50-150			

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Logos Operating, LLC  
PO Box 18  
Flora Vista NM, 87415

Project Name: Rosa 267  
Project Number: 12035-0114  
Project Manager: Larissa Farrell

Reported:  
10/11/19 16:32

### Nonhalogenated Organics by 8015 - DRO/ORO - Quality Control

#### Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### Batch 1941026 - DRO Extraction EPA 3570

##### Blank (1941026-BLK1)

Prepared: 10/09/19 0 Analyzed: 10/09/19 1

Diesel Range Organics (C10-C28)	ND	25.0	mg/kg							
Oil Range Organics (C28-C40)	ND	50.0	"							
Surrogate: n-Nonane	58.4		"	50.0		117	50-200			

##### LCS (1941026-BS1)

Prepared: 10/09/19 0 Analyzed: 10/09/19 1

Diesel Range Organics (C10-C28)	537	25.0	mg/kg	500		107	38-132			
Surrogate: n-Nonane	60.1		"	50.0		120	50-200			

##### Matrix Spike (1941026-MS1)

Source: P910028-01

Prepared: 10/09/19 0 Analyzed: 10/09/19 1

Diesel Range Organics (C10-C28)	767	25.0	mg/kg	500	220	109	38-132			
Surrogate: n-Nonane	58.8		"	50.0		118	50-200			

##### Matrix Spike Dup (1941026-MSD1)

Source: P910028-01

Prepared: 10/09/19 0 Analyzed: 10/09/19 1

Diesel Range Organics (C10-C28)	777	25.0	mg/kg	500	220	112	38-132	1.33	20	
Surrogate: n-Nonane	58.6		"	50.0		117	50-200			

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Logos Operating, LLC	Project Name:	Rosa 267	Reported: 10/11/19 16:32
PO Box 18	Project Number:	12035-0114	
Flora Vista NM, 87415	Project Manager:	Larissa Farrell	

## Nonhalogenated Organics by 8015 - GRO - Quality Control

## Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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## Batch 1941027 - Purge and Trap EPA 5030A

## Blank (1941027-BLK1)

Prepared: 10/09/19 1 Analyzed: 10/11/19 0

Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg							
Surrogate: 1-Chloro-4-fluorobenzene-FID	7.07		"	8.00		88.4	50-150			

## LCS (1941027-BS2)

Prepared: 10/09/19 1 Analyzed: 10/11/19 1

Gasoline Range Organics (C6-C10)	43.9	20.0	mg/kg	50.0		87.7	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	7.06		"	8.00		88.3	50-150			

## Matrix Spike (1941027-MS2)

Source: P910027-01

Prepared: 10/09/19 1 Analyzed: 10/11/19 1

Gasoline Range Organics (C6-C10)	46.5	20.0	mg/kg	50.0	ND	93.0	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	7.07		"	8.00		88.4	50-150			

## Matrix Spike Dup (1941027-MSD2)

Source: P910027-01

Prepared: 10/09/19 1 Analyzed: 10/11/19 1

Gasoline Range Organics (C6-C10)	46.2	20.0	mg/kg	50.0	ND	92.3	70-130	0.734	20	
Surrogate: 1-Chloro-4-fluorobenzene-FID	7.02		"	8.00		87.8	50-150			

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Logos Operating, LLC	Project Name:	Rosa 267	<b>Reported:</b> 10/11/19 16:32
PO Box 18	Project Number:	12035-0114	
Flora Vista NM, 87415	Project Manager:	Larissa Farrell	

**Anions by 300.0/9056A - Quality Control****Envirotech Analytical Laboratory**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 1941028 - Anion Extraction EPA 300.0/9056A****Blank (1941028-BLK1)**

Prepared &amp; Analyzed: 10/09/19 1

Chloride ND 20.0 mg/kg

**LCS (1941028-BS1)**

Prepared &amp; Analyzed: 10/09/19 1

Chloride 256 20.0 mg/kg 250 102 90-110

**Matrix Spike (1941028-MS1)****Source: P910027-01**

Prepared &amp; Analyzed: 10/09/19 1

Chloride 295 20.0 mg/kg 250 36.3 103 80-120

**Matrix Spike Dup (1941028-MSD1)****Source: P910027-01**

Prepared &amp; Analyzed: 10/09/19 1

Chloride 293 20.0 mg/kg 250 36.3 103 80-120 0.677 20

**QC Summary Report****Comment:**

Calculations are based off of the raw (non-rounded) data. However, for reporting purposes all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

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Logos Operating, LLC  
PO Box 18  
Flora Vista NM, 87415

Project Name: Rosa 267  
Project Number: 12035-0114  
Project Manager: Larissa Farrell

**Reported:**  
10/11/19 16:32

#### Notes and Definitions

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

RPD Relative Percent Difference

\*\* Methods marked with \*\* are non-accredited methods.

Soil data is reported on an "as received" weight basis, unless reported otherwise.

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Page 1 of 1

envirotech-inc.com  
labadmin@envirotech-inc.com













LOGOS Operating, LLC – Rosa Unit 267  
Topography Map  
Unit M, Section 28, T31N, R5W  
San Juan County, NM



664

30-039-25012

E

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS  
NORTHWESTERN NEW MEXICO

2293W

Operator M. Anderson, Inc. Location: Unit 7 Sec. 28 Twp 31 Rng 5Name of Well/Wells or Pipeline Serviced Lasa # 267Elevation 6513 Completion Date 9-19-91 Total Depth 412 Land Type FCasing Strings, Sizes, Types & Depths 40" 40' 5" 71C

If Casing Strings are cemented, show amounts &amp; types used

12 sacks of Cement

If Cement or Bentonite Plugs have been placed, show depths &amp; amounts used

NODepths & thickness of water zones with description of water: Fresh, Clear, Salty, Sulphur, Etc. 240' fresh

RECEIVED

FEB 24 1992

Depths gas encountered: NOOIL CON. DIV.  
DIST. 3

Ground bed depth with type &amp; amount of coke breeze used:

412' Ribberg, 67 sacks

Depths anodes placed:

Depths vent pipes placed: 350'Vent pipe perforations: 1" apart, perforated bottom 280' from 2nd anode.

Remarks:

If any of the above data is unavailable, please indicate so. Copies of all logs, including Drillers Log, Water Analyses & Well Bore Schematics should be submitted when available. Unplugged abandoned wells are to be included.

Land Type may be shown: F-Federal; I-Indian; S-State; P-Fee.  
If Federal or Indian, add Lease Number.



## Analytical Report

### Report Summary

Client: Logos Operating, LLC

Samples Received: 10/24/2019

Job Number: 12035-0114

Work Order: P910164

Project Name/Location: Rosa 267-Delin

Report Reviewed By:

A handwritten signature in blue ink, appearing to read 'Walter Hinchman', is written over a horizontal line.

Date: 10/31/19

Walter Hinchman, Laboratory Director



Envirotech Inc. certifies the test results meet all requirements of TNI unless footnoted otherwise.  
Statement of Data Authenticity: Envirotech, Inc. attests the data reported has not been altered in any way.  
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Envirotech, Inc. holds the Utah TNI certification NM009792018-1 for the data reported.  
Envirotech, Inc. holds the Texas TNI certification T104704557-19-2 for the data reported.





Logos Operating, LLC  
PO Box 18  
Flora Vista NM, 87415

Project Name: Rosa 267-Delin  
Project Number: 12035-0114  
Project Manager: Larissa Farrell

**Reported:**  
10/31/19 15:04

### Analytical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
Rosa 267 SD1	P910164-01A	Soil	10/24/19	10/24/19	Glass Jar, 4 oz.
	P910164-01B	Soil	10/24/19	10/24/19	Glass Jar, 4 oz.
Rosa 267 SD2	P910164-02A	Soil	10/24/19	10/24/19	Glass Jar, 4 oz.
	P910164-02B	Soil	10/24/19	10/24/19	Glass Jar, 4 oz.
Rosa 267 SD3	P910164-03A	Soil	10/24/19	10/24/19	Glass Jar, 4 oz.
	P910164-03B	Soil	10/24/19	10/24/19	Glass Jar, 4 oz.
Rosa 267 SD4	P910164-04A	Soil	10/24/19	10/24/19	Glass Jar, 4 oz.
	P910164-04B	Soil	10/24/19	10/24/19	Glass Jar, 4 oz.
Rosa 267 SD5	P910164-05A	Soil	10/24/19	10/24/19	Glass Jar, 4 oz.
	P910164-05B	Soil	10/24/19	10/24/19	Glass Jar, 4 oz.

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Logos Operating, LLC	Project Name:	Rosa 267-Delin	Reported: 10/31/19 15:04
PO Box 18	Project Number:	12035-0114	
Flora Vista NM, 87415	Project Manager:	Larissa Farrell	

**Rosa 267 SD1  
P910164-01 (Solid)**

Reporting									
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Volatile Organics by EPA 8021</b>									
Benzene	ND	0.0250	mg/kg	1	1944004	10/29/19	10/30/19	EPA 8021B	
Toluene	ND	0.0250	mg/kg	1	1944004	10/29/19	10/30/19	EPA 8021B	
Ethylbenzene	ND	0.0250	mg/kg	1	1944004	10/29/19	10/30/19	EPA 8021B	
p,m-Xylene	ND	0.0500	mg/kg	1	1944004	10/29/19	10/30/19	EPA 8021B	
o-Xylene	ND	0.0250	mg/kg	1	1944004	10/29/19	10/30/19	EPA 8021B	
Total Xylenes	ND	0.0250	mg/kg	1	1944004	10/29/19	10/30/19	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		104 %		50-150	1944004	10/29/19	10/30/19	EPA 8021B	
<b>Nonhalogenated Organics by 8015 - DRO/ORO</b>									
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg	1	1944008	10/29/19	10/30/19	EPA 8015D	
Oil Range Organics (C28-C40)	ND	50.0	mg/kg	1	1944008	10/29/19	10/30/19	EPA 8015D	
Surrogate: n-Nonane		99.7 %		50-200	1944008	10/29/19	10/30/19	EPA 8015D	
<b>Nonhalogenated Organics by 8015 - GRO</b>									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1944004	10/29/19	10/30/19	EPA 8015D	
Surrogate: 1-Chloro-4-fluorobenzene-FID		85.0 %		50-150	1944004	10/29/19	10/30/19	EPA 8015D	
<b>Anions by 300.0/9056A</b>									
Chloride	101	40.0	mg/kg	2	1944025	10/30/19	10/31/19	EPA 300.0/9056A	

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Logos Operating, LLC	Project Name:	Rosa 267-Delin	Reported: 10/31/19 15:04
PO Box 18	Project Number:	12035-0114	
Flora Vista NM, 87415	Project Manager:	Larissa Farrell	

**Rosa 267 SD2  
P910164-02 (Solid)**

Reporting									
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Volatile Organics by EPA 8021</b>									
Benzene	ND	0.0250	mg/kg	1	1944004	10/29/19	10/30/19	EPA 8021B	
Toluene	ND	0.0250	mg/kg	1	1944004	10/29/19	10/30/19	EPA 8021B	
Ethylbenzene	ND	0.0250	mg/kg	1	1944004	10/29/19	10/30/19	EPA 8021B	
p,m-Xylene	ND	0.0500	mg/kg	1	1944004	10/29/19	10/30/19	EPA 8021B	
o-Xylene	ND	0.0250	mg/kg	1	1944004	10/29/19	10/30/19	EPA 8021B	
Total Xylenes	ND	0.0250	mg/kg	1	1944004	10/29/19	10/30/19	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		106 %		50-150	1944004	10/29/19	10/30/19	EPA 8021B	
<b>Nonhalogenated Organics by 8015 - DRO/ORO</b>									
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg	1	1944008	10/29/19	10/30/19	EPA 8015D	
Oil Range Organics (C28-C40)	ND	50.0	mg/kg	1	1944008	10/29/19	10/30/19	EPA 8015D	
Surrogate: n-Nonane		101 %		50-200	1944008	10/29/19	10/30/19	EPA 8015D	
<b>Nonhalogenated Organics by 8015 - GRO</b>									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1944004	10/29/19	10/30/19	EPA 8015D	
Surrogate: 1-Chloro-4-fluorobenzene-FID		84.8 %		50-150	1944004	10/29/19	10/30/19	EPA 8015D	
<b>Anions by 300.0/9056A</b>									
Chloride	179	40.0	mg/kg	2	1944025	10/30/19	10/31/19	EPA 300.0/9056A	

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Logos Operating, LLC	Project Name:	Rosa 267-Delin	Reported: 10/31/19 15:04
PO Box 18	Project Number:	12035-0114	
Flora Vista NM, 87415	Project Manager:	Larissa Farrell	

**Rosa 267 SD3  
P910164-03 (Solid)**

Reporting									
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Volatile Organics by EPA 8021</b>									
Benzene	ND	0.0250	mg/kg	1	1944004	10/29/19	10/30/19	EPA 8021B	
Toluene	ND	0.0250	mg/kg	1	1944004	10/29/19	10/30/19	EPA 8021B	
Ethylbenzene	ND	0.0250	mg/kg	1	1944004	10/29/19	10/30/19	EPA 8021B	
p,m-Xylene	ND	0.0500	mg/kg	1	1944004	10/29/19	10/30/19	EPA 8021B	
o-Xylene	ND	0.0250	mg/kg	1	1944004	10/29/19	10/30/19	EPA 8021B	
Total Xylenes	ND	0.0250	mg/kg	1	1944004	10/29/19	10/30/19	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		104 %		50-150	1944004	10/29/19	10/30/19	EPA 8021B	
<b>Nonhalogenated Organics by 8015 - DRO/ORO</b>									
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg	1	1944008	10/29/19	10/30/19	EPA 8015D	
Oil Range Organics (C28-C40)	ND	50.0	mg/kg	1	1944008	10/29/19	10/30/19	EPA 8015D	
Surrogate: n-Nonane		101 %		50-200	1944008	10/29/19	10/30/19	EPA 8015D	
<b>Nonhalogenated Organics by 8015 - GRO</b>									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1944004	10/29/19	10/30/19	EPA 8015D	
Surrogate: 1-Chloro-4-fluorobenzene-FID		85.1 %		50-150	1944004	10/29/19	10/30/19	EPA 8015D	
<b>Anions by 300.0/9056A</b>									
Chloride	199	40.0	mg/kg	2	1944025	10/30/19	10/31/19	EPA 300.0/9056A	

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Logos Operating, LLC	Project Name:	Rosa 267-Delin	
PO Box 18	Project Number:	12035-0114	Reported:
Flora Vista NM, 87415	Project Manager:	Larissa Farrell	10/31/19 15:04

**Rosa 267 SD4  
P910164-04 (Solid)**

Reporting									
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Volatile Organics by EPA 8021</b>									
Benzene	ND	0.0250	mg/kg	1	1944004	10/29/19	10/30/19	EPA 8021B	
Toluene	ND	0.0250	mg/kg	1	1944004	10/29/19	10/30/19	EPA 8021B	
Ethylbenzene	ND	0.0250	mg/kg	1	1944004	10/29/19	10/30/19	EPA 8021B	
p,m-Xylene	ND	0.0500	mg/kg	1	1944004	10/29/19	10/30/19	EPA 8021B	
o-Xylene	ND	0.0250	mg/kg	1	1944004	10/29/19	10/30/19	EPA 8021B	
Total Xylenes	ND	0.0250	mg/kg	1	1944004	10/29/19	10/30/19	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		105 %		50-150	1944004	10/29/19	10/30/19	EPA 8021B	
<b>Nonhalogenated Organics by 8015 - DRO/ORO</b>									
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg	1	1944008	10/29/19	10/30/19	EPA 8015D	
Oil Range Organics (C28-C40)	ND	50.0	mg/kg	1	1944008	10/29/19	10/30/19	EPA 8015D	
Surrogate: n-Nonane		101 %		50-200	1944008	10/29/19	10/30/19	EPA 8015D	
<b>Nonhalogenated Organics by 8015 - GRO</b>									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1944004	10/29/19	10/30/19	EPA 8015D	
Surrogate: 1-Chloro-4-fluorobenzene-FID		85.3 %		50-150	1944004	10/29/19	10/30/19	EPA 8015D	
<b>Anions by 300.0/9056A</b>									
Chloride	331	40.0	mg/kg	2	1944025	10/30/19	10/31/19	EPA 300.0/9056A	

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Logos Operating, LLC	Project Name:	Rosa 267-Delin	Reported: 10/31/19 15:04
PO Box 18	Project Number:	12035-0114	
Flora Vista NM, 87415	Project Manager:	Larissa Farrell	

**Rosa 267 SD5  
P910164-05 (Solid)**

Reporting									
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Volatile Organics by EPA 8021</b>									
Benzene	ND	0.0250	mg/kg	1	1944004	10/29/19	10/30/19	EPA 8021B	
Toluene	ND	0.0250	mg/kg	1	1944004	10/29/19	10/30/19	EPA 8021B	
Ethylbenzene	ND	0.0250	mg/kg	1	1944004	10/29/19	10/30/19	EPA 8021B	
p,m-Xylene	ND	0.0500	mg/kg	1	1944004	10/29/19	10/30/19	EPA 8021B	
o-Xylene	ND	0.0250	mg/kg	1	1944004	10/29/19	10/30/19	EPA 8021B	
Total Xylenes	ND	0.0250	mg/kg	1	1944004	10/29/19	10/30/19	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		102 %		50-150	1944004	10/29/19	10/30/19	EPA 8021B	
<b>Nonhalogenated Organics by 8015 - DRO/ORO</b>									
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg	1	1944008	10/29/19	10/30/19	EPA 8015D	
Oil Range Organics (C28-C40)	ND	50.0	mg/kg	1	1944008	10/29/19	10/30/19	EPA 8015D	
Surrogate: n-Nonane		100 %		50-200	1944008	10/29/19	10/30/19	EPA 8015D	
<b>Nonhalogenated Organics by 8015 - GRO</b>									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1944004	10/29/19	10/30/19	EPA 8015D	
Surrogate: 1-Chloro-4-fluorobenzene-FID		84.9 %		50-150	1944004	10/29/19	10/30/19	EPA 8015D	
<b>Anions by 300.0/9056A</b>									
Chloride	ND	40.0	mg/kg	2	1944025	10/30/19	10/31/19	EPA 300.0/9056A	

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Logos Operating, LLC	Project Name:	Rosa 267-Delin	Reported: 10/31/19 15:04
PO Box 18	Project Number:	12035-0114	
Flora Vista NM, 87415	Project Manager:	Larissa Farrell	

## Volatile Organics by EPA 8021 - Quality Control

## Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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## Batch 1944004 - Purge and Trap EPA 5030A

## Blank (1944004-BLK1)

Prepared: 10/29/19 0 Analyzed: 10/31/19 0

Benzene	ND	0.0250	mg/kg							
Toluene	ND	0.0250	"							
Ethylbenzene	ND	0.0250	"							
p,m-Xylene	ND	0.0500	"							
o-Xylene	ND	0.0250	"							
Total Xylenes	ND	0.0250	"							
Surrogate: 4-Bromochlorobenzene-PID	8.52		"	8.00		107	50-150			

## LCS (1944004-BS1)

Prepared: 10/29/19 0 Analyzed: 10/31/19 0

Benzene	3.98	0.0250	mg/kg	5.00		79.5	70-130			
Toluene	4.59	0.0250	"	5.00		91.7	70-130			
Ethylbenzene	4.72	0.0250	"	5.00		94.3	70-130			
p,m-Xylene	9.39	0.0500	"	10.0		93.9	70-130			
o-Xylene	4.74	0.0250	"	5.00		94.9	70-130			
Total Xylenes	14.1	0.0250	"	15.0		94.2	70-130			
Surrogate: 4-Bromochlorobenzene-PID	8.52		"	8.00		107	50-150			

## Matrix Spike (1944004-MS1)

Source: P910164-01

Prepared: 10/29/19 0 Analyzed: 10/31/19 0

Benzene	4.02	0.0250	mg/kg	5.00	ND	80.3	54.3-133			
Toluene	4.65	0.0250	"	5.00	ND	93.1	61.4-130			
Ethylbenzene	4.81	0.0250	"	5.00	ND	96.2	61.4-133			
p,m-Xylene	9.57	0.0500	"	10.0	ND	95.7	63.3-131			
o-Xylene	4.83	0.0250	"	5.00	ND	96.5	63.3-131			
Total Xylenes	14.4	0.0250	"	15.0	ND	96.0	63.3-131			
Surrogate: 4-Bromochlorobenzene-PID	8.62		"	8.00		108	50-150			

## Matrix Spike Dup (1944004-MSD1)

Source: P910164-01

Prepared: 10/29/19 0 Analyzed: 10/31/19 0

Benzene	3.86	0.0250	mg/kg	5.00	ND	77.2	54.3-133	3.96	20	
Toluene	4.47	0.0250	"	5.00	ND	89.4	61.4-130	4.00	20	
Ethylbenzene	4.62	0.0250	"	5.00	ND	92.5	61.4-133	3.90	20	
p,m-Xylene	9.18	0.0500	"	10.0	ND	91.8	63.3-131	4.12	20	
o-Xylene	4.62	0.0250	"	5.00	ND	92.5	63.3-131	4.28	20	
Total Xylenes	13.8	0.0250	"	15.0	ND	92.0	63.3-131	4.17	20	
Surrogate: 4-Bromochlorobenzene-PID	8.70		"	8.00		109	50-150			

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Logos Operating, LLC  
PO Box 18  
Flora Vista NM, 87415

Project Name: Rosa 267-Delin  
Project Number: 12035-0114  
Project Manager: Larissa Farrell

Reported:  
10/31/19 15:04

### Nonhalogenated Organics by 8015 - DRO/ORO - Quality Control

#### Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### Batch 1944008 - DRO Extraction EPA 3570

##### Blank (1944008-BLK1)

Prepared: 10/29/19 1 Analyzed: 10/30/19 0

Diesel Range Organics (C10-C28)	ND	25.0	mg/kg							
Oil Range Organics (C28-C40)	ND	50.0	"							
Surrogate: n-Nonane	47.5		"	50.0		95.0	50-200			

##### LCS (1944008-BS1)

Prepared: 10/29/19 1 Analyzed: 10/30/19 0

Diesel Range Organics (C10-C28)	496	25.0	mg/kg	500		99.3	38-132			
Surrogate: n-Nonane	50.8		"	50.0		102	50-200			

##### Matrix Spike (1944008-MS1)

Source: P910167-01

Prepared: 10/29/19 1 Analyzed: 10/30/19 1

Diesel Range Organics (C10-C28)	511	25.0	mg/kg	500	ND	102	38-132			
Surrogate: n-Nonane	49.4		"	50.0		98.8	50-200			

##### Matrix Spike Dup (1944008-MSD1)

Source: P910167-01

Prepared: 10/29/19 1 Analyzed: 10/30/19 1

Diesel Range Organics (C10-C28)	525	25.0	mg/kg	500	ND	105	38-132	2.61	20	
Surrogate: n-Nonane	48.7		"	50.0		97.3	50-200			

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Logos Operating, LLC	Project Name:	Rosa 267-Delin	Reported: 10/31/19 15:04
PO Box 18	Project Number:	12035-0114	
Flora Vista NM, 87415	Project Manager:	Larissa Farrell	

## Nonhalogenated Organics by 8015 - GRO - Quality Control

## Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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## Batch 1944004 - Purge and Trap EPA 5030A

## Blank (1944004-BLK1)

Prepared: 10/29/19 0 Analyzed: 10/31/19 0

Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg							
Surrogate: 1-Chloro-4-fluorobenzene-FID	6.86		"	8.00		85.8	50-150			

## LCS (1944004-BS2)

Prepared: 10/29/19 0 Analyzed: 10/31/19 0

Gasoline Range Organics (C6-C10)	47.4	20.0	mg/kg	50.0		94.9	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	7.10		"	8.00		88.8	50-150			

## Matrix Spike (1944004-MS2)

Source: P910164-01

Prepared: 10/29/19 0 Analyzed: 10/31/19 0

Gasoline Range Organics (C6-C10)	46.9	20.0	mg/kg	50.0	ND	93.9	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	6.91		"	8.00		86.4	50-150			

## Matrix Spike Dup (1944004-MSD2)

Source: P910164-01

Prepared: 10/29/19 0 Analyzed: 10/31/19 0

Gasoline Range Organics (C6-C10)	45.9	20.0	mg/kg	50.0	ND	91.8	70-130	2.22	20	
Surrogate: 1-Chloro-4-fluorobenzene-FID	6.95		"	8.00		86.9	50-150			

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Logos Operating, LLC	Project Name:	Rosa 267-Delin	<b>Reported:</b> 10/31/19 15:04
PO Box 18	Project Number:	12035-0114	
Flora Vista NM, 87415	Project Manager:	Larissa Farrell	

**Anions by 300.0/9056A - Quality Control****Envirotech Analytical Laboratory**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 1944025 - Anion Extraction EPA 300.0/9056A****Blank (1944025-BLK1)**

Prepared: 10/30/19 1 Analyzed: 10/31/19 0

Chloride	ND	20.0	mg/kg							
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**LCS (1944025-BS1)**

Prepared: 10/30/19 1 Analyzed: 10/31/19 0

Chloride	254	20.0	mg/kg	250		102	90-110			
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**Matrix Spike (1944025-MS1)****Source: P910156-01**

Prepared: 10/30/19 1 Analyzed: 10/31/19 0

Chloride	303	20.0	mg/kg	250	46.8	102	80-120			
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**Matrix Spike Dup (1944025-MSD1)****Source: P910156-01**

Prepared: 10/30/19 1 Analyzed: 10/31/19 0

Chloride	300	20.0	mg/kg	250	46.8	101	80-120	0.700	20	
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**QC Summary Report****Comment:**

Calculations are based off of the raw (non-rounded) data. However, for reporting purposes all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

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Logos Operating, LLC  
PO Box 18  
Flora Vista NM, 87415

Project Name: Rosa 267-Delin  
Project Number: 12035-0114  
Project Manager: Larissa Farrell

**Reported:**  
10/31/19 15:04

#### Notes and Definitions

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

RPD Relative Percent Difference

\*\* Methods marked with \*\* are non-accredited methods.

Soil data is reported on an "as received" weight basis, unless reported otherwise.

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### Chain of Custody

Page 1 of 1



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