

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	
District RP	
Facility ID	
Application ID	

Release Notification

WMOCD

Responsible Party

JAN 11 2019

Responsible Party Dugan Production Corp.	OGRID 006515	DISTRICT III
Contact Name Kevin Smaka	Contact Telephone 505-325-1821	
Contact email kevin.smaka@duganproduction.com	Incident # NCS 1828930229	
Contact mailing address		

Location of Release Source

Latitude 36.339824

Longitude -107.7109528

(NAD 83 in decimal degrees to 5 decimal places)

Site Name Arviso #1	Site Type Well
Date Release Discovered 9/28/2018	API#30-045-33943

Unit Letter	Section	Township	Range	County
L	5	24N	8W	San Juan

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) 23	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input checked="" type="checkbox"/> Yes <input 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 Water line piping corroded and began to leak.

30

Smith, Cory, EMNRD

From: Smith, Cory, EMNRD
Sent: Monday, January 14, 2019 8:48 AM
To: 'Kevin Smaka'
Cc: Fields, Vanessa, EMNRD; 'l1thomas@blm.gov'; 'aadeloye@blm.gov'
Subject: RE: Dugan Prod, Arviso #1, P812032
Attachments: Gypsum application.doc

Kevin,

OCD Approves Dugan's remediation plan and timelines for the remediation at the Arviso #1. With the following conditions of approval

- Dugan will only rip/disc areas that were affected by the release.
- Dugan will schedule with OCD to witness final Confirmation sampling for the "March 15th" sampling event per 19.15..29 NMAC,
- Dugan will need to sample and varying depths to ensure the complete 4" has been remediated.
- All soils that are not completely and entire remediated by the "March 15" sampling event will need to be remediated with an alternative remediation plan approved by the OCD.

The OCD recommends that Dugan consults the attached Gypsum document to aid with remediation specifically the application rate and the recommend water usage.

OCD approval of this remediation plan does not relieve Dugan of any requirements imposed by other regulatory agencies.

Cory Smith
Environmental Specialist
Oil Conservation Division
Energy, Minerals, & Natural Resources
1000 Rio Brazos, Aztec, NM 87410
(505)334-6178 ext 115
cory.smith@state.nm.us

From: Smith, Cory, EMNRD
Sent: Tuesday, January 8, 2019 11:53 AM
To: 'Kevin Smaka' <Kevin.Smaka@duganproduction.com>
Cc: Fields, Vanessa, EMNRD <Vanessa.Fields@state.nm.us>
Subject: RE: Dugan Prod, Arviso #1, P812032

Kevin,

Which sample is which? The report Dugan provided does not differentiate between sampling locations.

Also which area is going to be ripped? OCD does not approve of blending contaminates so only the area that is affect can be ripped for the application of gypsum.

State of New Mexico
Oil Conservation Division

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Was this a major release as defined by 19.15.29.7(A) NMAC? <input checked="" type="checkbox"/> Yes <input 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)? By Kevin Smaka, to Cory Smith and Jim Griswold Via E-mail.	

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 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: _____	Title: _____
Signature: _____	Date: _____
email: _____	Telephone: _____
<u>OCD Only</u> Received by: _____ Date: _____	

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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?	200' (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 type="checkbox"/> Yes <input checked="" 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 not on an exploration, development, production, or storage site?	<input checked="" type="checkbox"/> Yes <input 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 1/2-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.

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Oil Conservation Division

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Remediation Plan

Remediation Plan Checklist: Each of the following items must be included in the plan.

- ☒ Detailed description of proposed remediation technique
☒ Scaled sitemap with GPS coordinates showing delineation points
☒ Estimated volume of material to be remediated
☒ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
☒ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: Each of the following items must be confirmed as part of any request for deferral of remediation.

- ☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
☐ Extents of contamination must be fully delineated.
☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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Printed Name:

Kevin Smaka

Title:

Engineer

Signature:

Kevin Smaka

Date:

12-21-18

email:

Telephone:

325-1821

OCD Only

Received by:

OCD

Date:

1/11/19

☐ Approved☒

Approved with Attached Conditions of Approval

☐ Denied☐ Deferral Approved

Signature:

[Signature]

Date:

1/14/19

State of New Mexico
Oil Conservation Division

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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:

Kevin Smakg

Title:

Engineer

Signature:

K Smakg

Date:

12-21-18

email:

Telephone:

325-1821

OCD Only

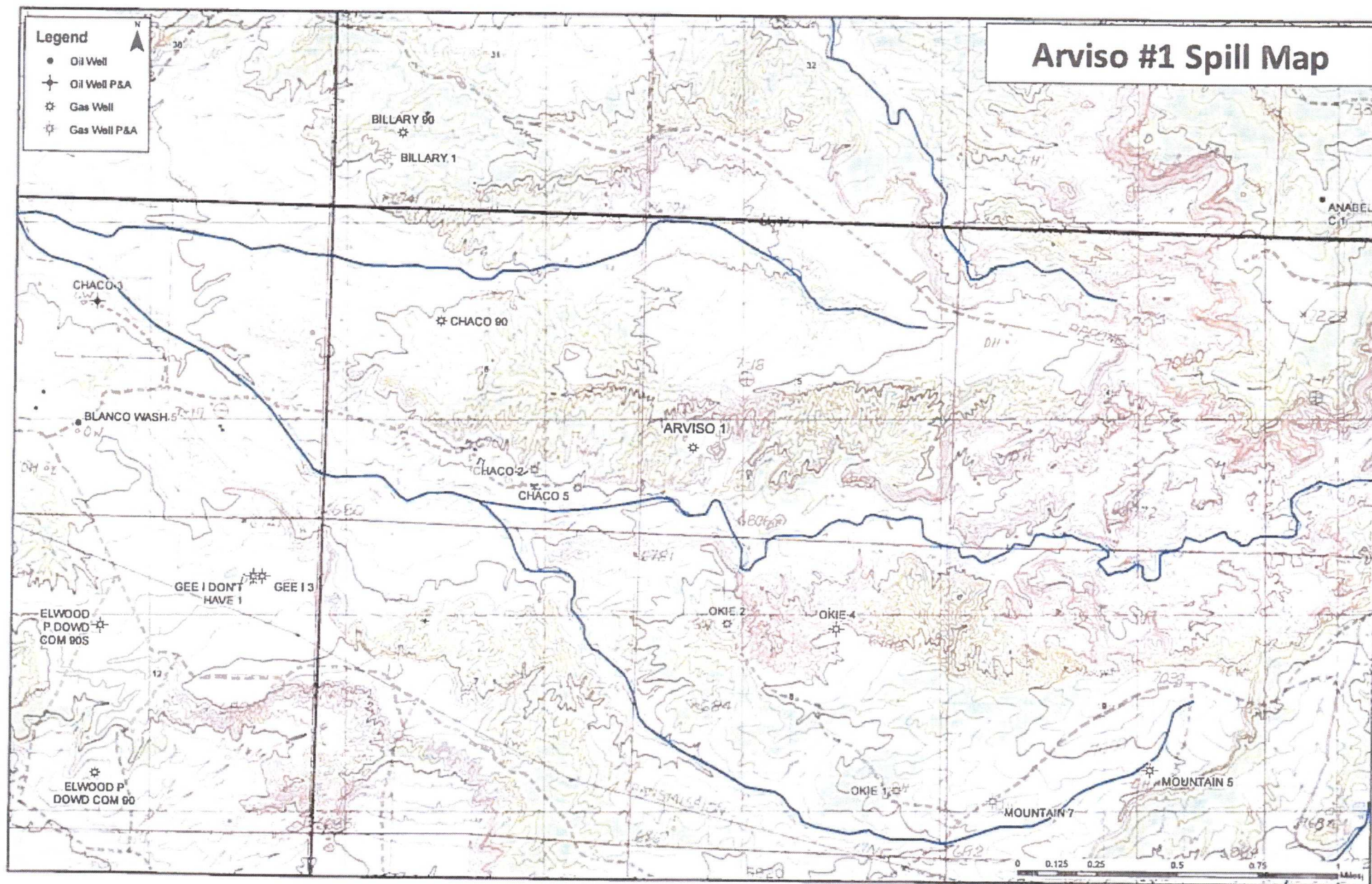
Received by:

Date:

Legend

- Oil Well
- ✦ Oil Well P&A
- ✧ Gas Well
- ✧ Gas Well P&A

Arviso #1 Spill Map



Arviso Spill Map

Write a description for your map.

Legend

- Arviso #1
- Feature 1

36.3398247,-107.7109528

Affected Area

Google Earth

100 ft



Arviso Spill Map

Write a description for your map.

Legend

- Arviso #1
- Feature 1



Legend

○ Sample Points

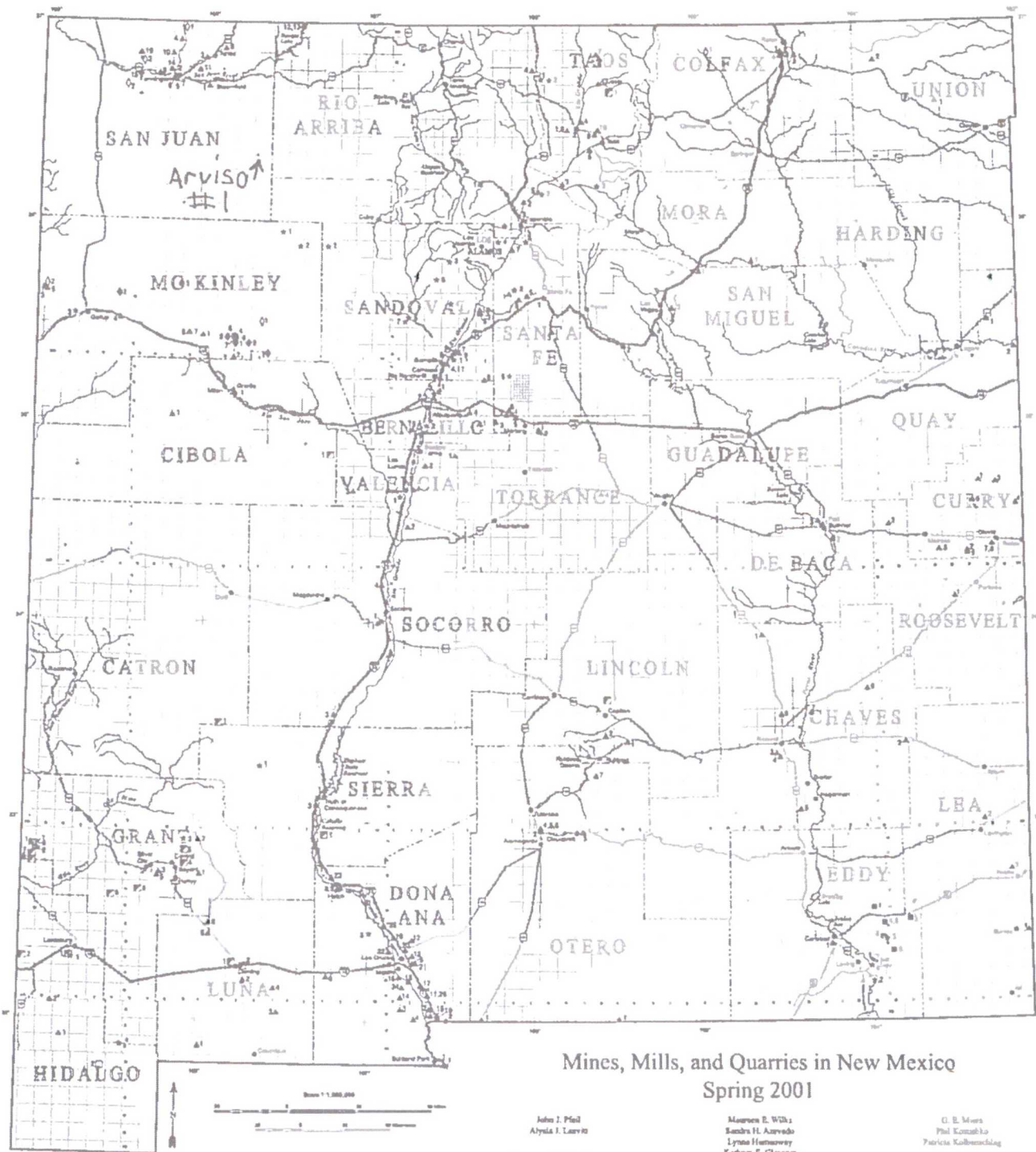


Arviso #1 Spill Map

ARVISO 1

0 25 50 100
Feet

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Mines, Mills, and Quarries in New Mexico Spring 2001

John J. Pfeil
Alycia J. Larrivé

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New Mexico Energy, Minerals and
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1220 South St. Francis Drive
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New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

		(active: R per annum)						(R=POD has been replaced and no longer serves this file, C=the file is closed)		(quarters are 1-NW 2-NE 3-SW 4-SE) (quarters are smallest to largest) (NAD83 UTM in meters)	
WR File Nbr	Sub	Basin	Use	Diversion	Owner	County	POD Number	Code	Grant	Source	Q 1 Q 2 Q 3 Q 4
SJ 009870	SJ	IRWY			D NM STATE HIGHWAY DEPT	SJ	SJ 009870			Shallow	4 1 6 4 2 3 36 24N 08W 261245 4017010*
SJ 009850	SJ	IRR			1976 ODIIE VAL C LAFMAN	SJ	SJ 009850			Shallow	3 3 3 36 24N 08W 262710 4016518*
						SJ	SJ 009850 S				3 1 3 36 24N 08W 262744 4016920*
						SJ	SJ 009850 S-2			Shallow	3 2 3 36 24N 08W 261147 4016909*
						SJ	SJ 009850 S-3			Shallow	2 4 3 36 24N 08W 261336 4016707*
SJ 02655A	SJ	STK			3 BRUCE STERLING	SJ	SJ 02655A			Shallow	3 4 2 32 24N 08W 197502 4017472*

Record Count: 6

POD Search:

POD Basin: San Juan

PLSS Search:

Ownership: 24N Range: 08W

Sorted by: File Number

*UTM location was derived from PLSS - see Help

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

10/26/18 11:31 AM

ACTIVE & INACTIVE POINTS OF DIVERSION

Exhibit #3

Okie #1 Hydrogeologic Report

The Okie #1 is located on Federal land on the Chaco Slope area of the San Juan Basin, San Juan County, New Mexico. The area can be characterized as an arid region with low ridges forested by Juniper and Pinon trees bordered by "Bad Lands" topography and sage brush flats.

A records search of the NM Office of the State Engineer -iWATERS database was conducted for the Okie #1 location. No water wells were located in the area of the below grade tank. The results of the search are shown on Exhibit 3.

The main source of stock water in the region is encountered in valley-fill deposits in existing arroyos at shallow depths of approximately 15 - 50 feet below the surface. The proposed below grade tank is not located in an arroyo. There is a small arroyo 200 feet to the south (Exhibit 1).

The Nacimiento Formation extends from the surface down to a depth of approximately 1218 feet. Thin silty sands inter-bedded with more dominant mudstones occur near the top. Toward the base of the unit, mud content decreases and sand content increases. Shale content in the Nacimiento increases to the west toward the outcrop and recharge area.

The Nacimiento is a source of ground water for livestock purposes and more rarely domestic use in some areas near the outcrop. With depth and distance from the outcrop, water quality decreases quickly and may be useful for livestock only (Stone, 1983).

Based on electric open hole logs, the iWATERS database, literature reviewed, depth to ground water ranges from 25 - 50 feet below the surface in major arroyos in the area. Moving away from the wash ground water depth drops rapidly to greater than 200 feet below the surface. At the location of the subject below grade tank, lesser amounts of poor quality ground water might be found at depths of approximately 200-250 and 400-800 feet below the surface in laterally discontinuous sand intervals in the middle and lower Nacimiento Formation. A deeper source of ground water would include the Ojo Alamo interval; at a depth of 1218-1300 feet below the surface.

Due to the high silt content in the sands, poor water and reservoir quality and unpredictable nature of sand occurrence, there has not been any Nacimiento water wells drilled in the area of the subject below grade tank.

This Hydrogeologic Report was prepared by Mr. Kevin Smaka, Engineer for Dugan Production.

- Stone, W.J., Lyford, F.P., Frenzel, P.F., Mizell, N.H., and Padgett, E.T., 1983, Hydrogeology and water resources of San Juan Basin, New Mexico: New Mexico Bureau of Mines and Mineral Resources Hydrologic Report 6, 70 p.
- Brown, D.R., and Stone, W.J., 1979, Hydrogeology of Aztec quadrangle, San Juan County, New Mexico: New Mexico Bureau of Mines and Mineral Resources Hydrogeologic Sheet 1.
- Levings, G.W., Craigg, S.D., Dam, W.L., Kernodle, J.M., and Thorn, C.R., 1990, Hydrogeology of the San Jose, Nacimiento, and Animas Formations in the San Juan Structural Basin, New Mexico, Colorado, Arizona and Utah: U.S. Geological Survey, Atlas HA-720-A, Sheet 1 and 2.
- Thorn, C.R., Levings, G.W., Craigg, S.D., Dam, W.L., and Kernodle, J.M., 1990, Hydrogeology of the Ojo Alamo Sandstone in the San Juan Structural Basin, New Mexico, Colorado, Arizona and Utah: U.S. Geological Survey, Atlas HA-720-B, Sheet 1 and 2.



FEMA Flood Map Service Center: Search By Address

Navigation

Search

Languages

MSC Home (/portal/)

MSC Search by Address (/portal/search)

MSC Search All Products (/portal/advanceSearch)

MSC Products and Tools (/portal/resources/productsandtools)

Hazus (/portal/resources/hazus)

LOMC Batch Files (/portal/resources/lomc)

Product Availability (/portal/productAvailability)

MSC Frequently Asked Questions (FAQs) (/portal/resources/faq)

MSC Email Subscriptions (/portal/subscriptionHome)

Contact MSC Help (/portal/resources/contact)

Enter an address, place, or coordinates: ?

-107.7109528, 36.3398247

Search

Whether you are in a high risk zone or not, you may need [flood insurance](https://www.fema.gov/national-flood-insurance-program) because most homeowners insurance doesn't cover flood damage. If you live in an area with low or moderate flood risk, you are 5 times more likely to experience flood than a fire in your home over the next 30 years. For many, a National Flood Insurance Program's flood insurance policy could cost less than \$400 per year. Call your insurance agent today and protect what you've built.

Learn more about [steps you can take](https://www.fema.gov/what-mitigation) to reduce the risk flood damage

Search Results—Products for SAN JUAN COUNTY UNINCORPORATED AREAS

Show ALL Products » (<https://msc.fema.gov/portal/availabilitySearch?addcommunity=350064&communityName=SAN>,

The flood map for the selected area is number **35045C2100F**, effective on **08/05/2010** ?

DYNAMIC MAP



MAP IMAGE



([https://msc.fema.gov/portal/downloadProduct?](https://msc.fema.gov/portal/downloadProduct?filepath=/35/P/Firm/35045C2100E.png&productTypeID=FINAL_PRODUCT&productSubTypeID=FIRM_PANEL)

[filepath=/35/P/Firm/35045C2100E.png&productTypeID=FINAL_PRODUCT&productSubTypeID=FIRM_PANEL](https://msc.fema.gov/portal/downloadProduct?filepath=/35/P/Firm/35045C2100E.png&productTypeID=FINAL_PRODUCT&productSubTypeID=FIRM_PANEL))

Changes to this FIRM ?

Revisions (0)
Amendments (0)
Revalidations (0)

You can choose a new flood map or move the location pin by selecting a different location on the locator map below or by entering a new location in the search field above. It may take a minute or more during peak hours to generate a dynamic FIRMette.

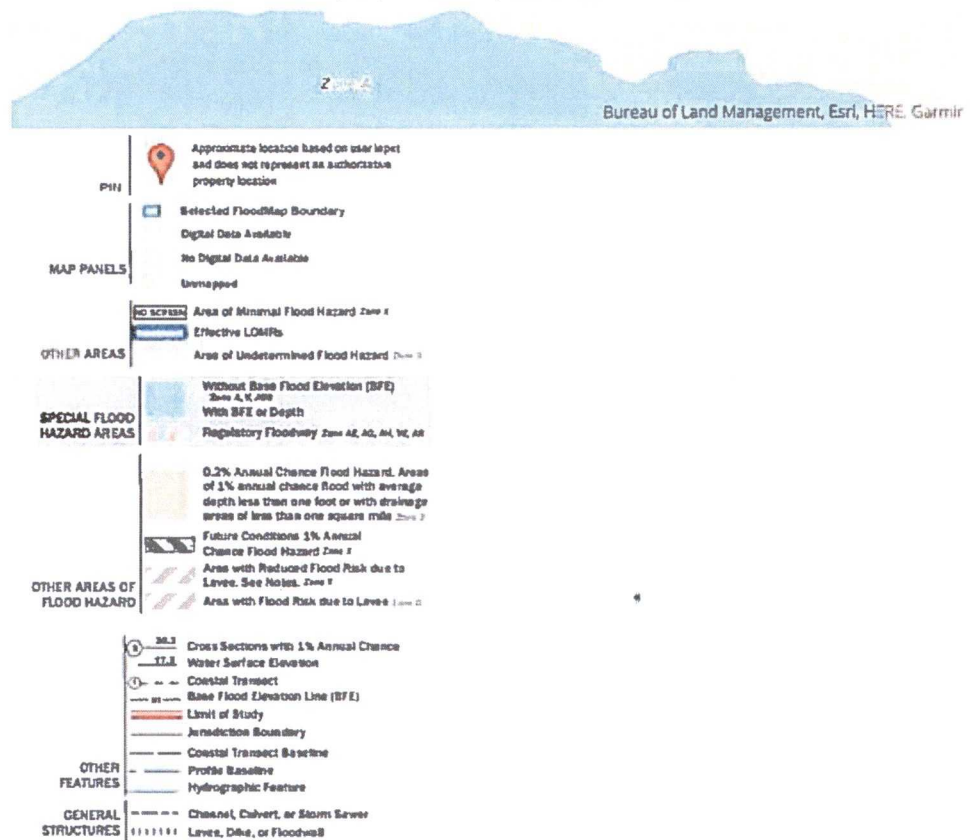
Go To NFHL Viewer » (<https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d>)



San Juan County
350064

AREA OF MINIMAL FLOOD HAZARD

35045C2100F
eff. 08/05/2010



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(<https://www.oig.dhs.gov/hotline>)

Official website of the Department of Homeland Security

Arviso #1

API# 30-045-33943

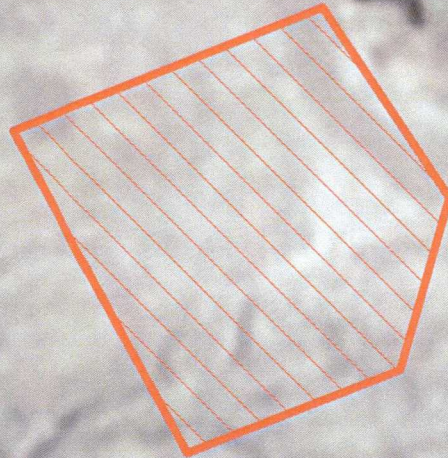
Spill Remediation Plan

In order to remediate the produced water spill at the Arviso #1, Dugan intends to take the following actions:

1. Rip the pad in the affected area. The soil on the pad is a type of clay and raking in gypsum has not proven to be effective. By ripping the 50' x 50' square that was affected we will get better results when treating the spill with gypsum. Dugan will not be mixing the contaminated soil with clean soil. Please see map titled: Arviso #1: Area to be ripped.
2. Dugan will apply gypsum as needed to remove the chlorides from the soil.
3. The affected area will be sampled on a monthly basis, but no later than the 15th of every month, until samples prove to be acceptable.
4. The area in the wash will no longer be treated or sampled. Sampling results 1 & 2, which came from the wash, indicate chloride levels were below 600 mg/L as directed in table 1 of the spill rule. Since this meets the criteria of the spill rule no further remedial action will be taken in the wash. Sample #3, the affected area on the well pad, was above 2000 mg/L chlorides. Dugan will continue efforts to clean up this area.
5. It is estimated that 370 cubic yards of dirt need remediation.
6. Dugan intends to start work no later than January 11, 2019.
7. Samples will be gathered by February 15th and March 15th.
8. Dugan plans to have all remedial activities completed by March 26th, 2019 (last day of the 90 day window).

Arviso #1: Area To Be Ripped

ARVISO 1



0 12.5 25 50 Feet

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Arviso Spill Map

Write a description for your map.

Legend

- Arviso #1
- Feature 1



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 ODC 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: _____ Title: _____

Signature: _____ Date: _____

email: _____ Telephone: _____

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: _____ Date: _____

Printed Name: _____ Title: _____

Analytical Report

Report Summary

Client: Dugan Production Corp.
Chain Of Custody Number:
Samples Received: 12/14/2018 4:18:00PM
Job Number: 06094-0177
Work Order: P812032
Project Name/Location: Arviso #1

Report Reviewed By:



Date: 12/19/18

Walter Hinchman, Laboratory Director



Date: 12/19/18

Tim Cain, Project Manager



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.
Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc.
Envirotech, Inc, currently holds the appropriate and available Utah TNI certification NM009792018-1 for the data reported.

Dugan Production Corp.
PO Box 420
Farmington NM, 87499

Project Name: Arviso #1
Project Number: 06094-0177
Project Manager: Mike Sandoval

Reported:
12/19/18 10:29

Analytical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
Arviso #1 - 1	P812032-01A	Soil	12/14/18	12/14/18	Glass Jar, 4 oz.
Arviso #1 - 2	P812032-02A	Soil	12/14/18	12/14/18	Glass Jar, 4 oz.
Arviso #1 - 3	P812032-03A	Soil	12/14/18	12/14/18	Glass Jar, 4 oz.

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Dugan Production Corp.
 PO Box 420
 Farmington NM, 87499

 Project Name: Arviso #1
 Project Number: 06094-0177
 Project Manager: Mike Sandoval

Reported:
 12/19/18 10:29

Arviso #1 - 1
P812032-01 (Solid)

Reporting

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	100	ug/kg	1	1851002	12/17/18	12/17/18	EPA 8021B	
Toluene	ND	100	ug/kg	1	1851002	12/17/18	12/17/18	EPA 8021B	
Ethylbenzene	ND	100	ug/kg	1	1851002	12/17/18	12/17/18	EPA 8021B	
p,m-Xylene	ND	200	ug/kg	1	1851002	12/17/18	12/17/18	EPA 8021B	
o-Xylene	ND	100	ug/kg	1	1851002	12/17/18	12/17/18	EPA 8021B	
Total Xylenes	ND	100	ug/kg	1	1851002	12/17/18	12/17/18	EPA 8021B	
Total BTEX	ND	100	ug/kg	1	1851002	12/17/18	12/17/18	EPA 8021B	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		98.0 %		50-150	1851002	12/17/18	12/17/18	EPA 8021B	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1851002	12/17/18	12/17/18	EPA 8015D	
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg	1	1851004	12/17/18	12/18/18	EPA 8015D	
Oil Range Organics (C28-C40+)	ND	50.0	mg/kg	1	1851004	12/17/18	12/18/18	EPA 8015D	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		101 %		50-150	1851002	12/17/18	12/17/18	EPA 8015D	
<i>Surrogate: n-Nonane</i>		91.6 %		50-200	1851004	12/17/18	12/18/18	EPA 8015D	
Anions by 300.0/9056A									
Chloride	375	20.0	mg/kg	1	1851001	12/17/18	12/17/18	EPA 300.0/9056A	

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Dugan Production Corp.
 PO Box 420
 Farmington NM, 87499

 Project Name: Arviso #1
 Project Number: 06094-0177
 Project Manager: Mike Sandoval

Reported:
 12/19/18 10:29

Arviso #1 - 2
P812032-02 (Solid)

Reporting

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	100	ug/kg	1	1851002	12/17/18	12/17/18	EPA 8021B	
Toluene	ND	100	ug/kg	1	1851002	12/17/18	12/17/18	EPA 8021B	
Ethylbenzene	ND	100	ug/kg	1	1851002	12/17/18	12/17/18	EPA 8021B	
p,m-Xylene	ND	200	ug/kg	1	1851002	12/17/18	12/17/18	EPA 8021B	
o-Xylene	ND	100	ug/kg	1	1851002	12/17/18	12/17/18	EPA 8021B	
Total Xylenes	ND	100	ug/kg	1	1851002	12/17/18	12/17/18	EPA 8021B	
Total BTEX	ND	100	ug/kg	1	1851002	12/17/18	12/17/18	EPA 8021B	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		98.2 %		50-150	1851002	12/17/18	12/17/18	EPA 8021B	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1851002	12/17/18	12/17/18	EPA 8015D	
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg	1	1851004	12/17/18	12/18/18	EPA 8015D	
Oil Range Organics (C28-C40+)	ND	50.0	mg/kg	1	1851004	12/17/18	12/18/18	EPA 8015D	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		102 %		50-150	1851002	12/17/18	12/17/18	EPA 8015D	
<i>Surrogate: n-Nonane</i>		94.6 %		50-200	1851004	12/17/18	12/18/18	EPA 8015D	
Anions by 300.0/9056A									
Chloride	296	20.0	mg/kg	1	1851001	12/17/18	12/17/18	EPA 300.0/9056A	

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Dugan Production Corp.	Project Name:	Arviso #1	Reported: 12/19/18 10:29
PO Box 420	Project Number:	06094-0177	
Farmington NM, 87499	Project Manager:	Mike Sandoval	

Arviso #1 - 3
P812032-03 (Solid)

Reporting									
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	100	ug/kg	1	1851002	12/17/18	12/17/18	EPA 8021B	
Toluene	ND	100	ug/kg	1	1851002	12/17/18	12/17/18	EPA 8021B	
Ethylbenzene	ND	100	ug/kg	1	1851002	12/17/18	12/17/18	EPA 8021B	
p,m-Xylene	ND	200	ug/kg	1	1851002	12/17/18	12/17/18	EPA 8021B	
o-Xylene	ND	100	ug/kg	1	1851002	12/17/18	12/17/18	EPA 8021B	
Total Xylenes	ND	100	ug/kg	1	1851002	12/17/18	12/17/18	EPA 8021B	
Total BTEX	ND	100	ug/kg	1	1851002	12/17/18	12/17/18	EPA 8021B	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		98.3 %		50-150	1851002	12/17/18	12/17/18	EPA 8021B	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg	1	1851002	12/17/18	12/17/18	EPA 8015D	
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg	1	1851004	12/17/18	12/18/18	EPA 8015D	
Oil Range Organics (C28-C40+)	ND	50.0	mg/kg	1	1851004	12/17/18	12/18/18	EPA 8015D	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		103 %		50-150	1851002	12/17/18	12/17/18	EPA 8015D	
<i>Surrogate: n-Nonane</i>		103 %		50-200	1851004	12/17/18	12/18/18	EPA 8015D	
Anions by 300.0/9056A									
Chloride	2040	20.0	mg/kg	1	1851001	12/17/18	12/17/18	EPA 300.0/9056A	

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Dugan Production Corp.
PO Box 420
Farmington NM, 87499

Project Name: Arviso #1
Project Number: 06094-0177
Project Manager: Mike Sandoval

Reported:
12/19/18 10:29

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 1851002 - Purge and Trap EPA 5030A

Blank (1851002-BLK1)

Prepared: 12/17/18 0 Analyzed: 12/17/18 1

Benzene	ND	100	ug/kg							
Toluene	ND	100	"							
Ethylbenzene	ND	100	"							
p,m-Xylene	ND	200	"							
o-Xylene	ND	100	"							
Total Xylenes	ND	100	"							
Total BTEX	ND	100	"							
Surrogate: 4-Bromochlorobenzene-PID	7880		"	8000		98.5	50-150			

LCS (1851002-BS1)

Prepared: 12/17/18 0 Analyzed: 12/17/18 1

Benzene	5000	100	ug/kg	5000		100	70-130			
Toluene	5030	100	"	5000		101	70-130			
Ethylbenzene	5070	100	"	5000		101	70-130			
p,m-Xylene	10400	200	"	10000		104	70-130			
o-Xylene	5060	100	"	5000		101	70-130			
Total Xylenes	15500	100	"	15000		103	70-130			
Surrogate: 4-Bromochlorobenzene-PID	7860		"	8000		98.3	50-150			

Matrix Spike (1851002-MS1)

Source: P812030-01

Prepared: 12/17/18 0 Analyzed: 12/17/18 2

Benzene	4590	100	ug/kg	5000	ND	91.8	54.3-133			
Toluene	4600	100	"	5000	ND	92.0	61.4-130			
Ethylbenzene	4630	100	"	5000	ND	92.6	61.4-133			
p,m-Xylene	9470	200	"	10000	ND	94.7	63.3-131			
o-Xylene	4590	100	"	5000	ND	91.8	63.3-131			
Total Xylenes	14100	100	"	15000	ND	93.8	63.3-131			
Surrogate: 4-Bromochlorobenzene-PID	7900		"	8000		98.7	50-150			

Matrix Spike Dup (1851002-MSD1)

Source: P812030-01

Prepared: 12/17/18 0 Analyzed: 12/18/18 1

Benzene	4990	100	ug/kg	5000	ND	99.8	54.3-133	8.32	20	
Toluene	5030	100	"	5000	ND	101	61.4-130	8.93	20	
Ethylbenzene	5090	100	"	5000	ND	102	61.4-133	9.52	20	
p,m-Xylene	10400	200	"	10000	ND	104	63.3-131	9.63	20	
o-Xylene	5030	100	"	5000	ND	101	63.3-131	9.18	20	
Total Xylenes	15500	100	"	15000	ND	103	63.3-131	9.49	20	
Surrogate: 4-Bromochlorobenzene-PID	7780		"	8000		97.2	50-150			

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5796 US Highway 64, Farmington, NM 87401

Three Springs • 65 Mercado Street, Suite 115, Durango, CO 81301

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laboratory@envirotech-inc.com

Dugan Production Corp.
 PO Box 420
 Farmington NM, 87499

 Project Name: Arviso #1
 Project Number: 06094-0177
 Project Manager: Mike Sandoval

Reported:
 12/19/18 10:29

Nonhalogenated Organics by 8015 - 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 1851002 - Purge and Trap EPA 5030A
Blank (1851002-BLK1)

Prepared: 12/17/18 0 Analyzed: 12/17/18 1

Gasoline Range Organics (C6-C10)	ND	20.0	mg/kg							
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>	<i>8.06</i>		<i>"</i>	<i>8.00</i>		<i>101</i>	<i>50-150</i>			<i>*</i>

LCS (1851002-BS2)

Prepared: 12/17/18 0 Analyzed: 12/17/18 1

Gasoline Range Organics (C6-C10)	45.4	20.0	mg/kg	50.0		90.9	70-130			
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>	<i>8.29</i>		<i>"</i>	<i>8.00</i>		<i>104</i>	<i>50-150</i>			

Matrix Spike (1851002-MS2)
Source: P812030-01

Prepared: 12/17/18 0 Analyzed: 12/17/18 2

Gasoline Range Organics (C6-C10)	48.3	20.0	mg/kg	50.0	ND	96.5	70-130			
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>	<i>8.18</i>		<i>"</i>	<i>8.00</i>		<i>102</i>	<i>50-150</i>			

Matrix Spike Dup (1851002-MSD2)
Source: P812030-01

Prepared: 12/17/18 0 Analyzed: 12/17/18 2

Gasoline Range Organics (C6-C10)	48.4	20.0	mg/kg	50.0	ND	96.9	70-130	0.347	20	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>	<i>8.31</i>		<i>"</i>	<i>8.00</i>		<i>104</i>	<i>50-150</i>			

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Dugan Production Corp.
 PO Box 420
 Farmington NM, 87499

 Project Name: Arviso #1
 Project Number: 06094-0177
 Project Manager: Mike Sandoval

Reported:
 12/19/18 10:29

Nonhalogenated Organics by 8015 - Quality Control
Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1851004 - DRO Extraction EPA 3570										
Blank (1851004-BLK1)				Prepared: 12/17/18 1 Analyzed: 12/18/18 0						
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg							
Oil Range Organics (C28-C40+)	*ND	50.0	"							*
Surrogate: n-Nonane	46.7		"	50.0		93.4	50-200			
LCS (1851004-BS1)				Prepared: 12/17/18 1 Analyzed: 12/18/18 0						
Diesel Range Organics (C10-C28)	460	25.0	mg/kg	500		92.0	38-132			
Surrogate: n-Nonane	46.7		"	50.0		93.4	50-200			
Matrix Spike (1851004-MS1)				Source: P812030-01		Prepared: 12/17/18 1 Analyzed: 12/18/18 0				
Diesel Range Organics (C10-C28)	582	25.0	mg/kg	500	96.7	97.0	38-132			
Surrogate: n-Nonane	48.6		"	50.0		97.2	50-200			
Matrix Spike Dup (1851004-MSD1)				Source: P812030-01		Prepared: 12/17/18 1 Analyzed: 12/18/18 0				
Diesel Range Organics (C10-C28)	628	25.0	mg/kg	500	96.7	106	38-132	7.66	20	
Surrogate: n-Nonane	48.2		"	50.0		96.5	50-200			

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Dugan Production Corp.
 PO Box 420
 Farmington NM, 87499

 Project Name: Arviso #1
 Project Number: 06094-0177
 Project Manager: Mike Sandoval

Reported:
 12/19/18 10:29

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 1851001 - Anion Extraction EPA 300.0/9056A
Blank (1851001-BLK1)

Prepared & Analyzed: 12/17/18 1

Chloride ND 20.0 mg/kg

LCS (1851001-BS1)

Prepared & Analyzed: 12/17/18 1

Chloride 256 20.0 mg/kg 250 102 90-110

Matrix Spike (1851001-MS1)
Source: P812024-01

Prepared & Analyzed: 12/17/18 1

Chloride 316 20.0 mg/kg 250 79.2 94.8 80-120

Matrix Spike Dup (1851001-MSD1)
Source: P812024-01

Prepared & Analyzed: 12/17/18 1

Chloride 321 20.0 mg/kg 250 79.2 96.8 80-120 1.57 20

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Dugan Production Corp.
PO Box 420
Farmington NM, 87499

Project Name: Arviso #1
Project Number: 06094-0177
Project Manager: Mike Sandoval

Reported:
12/19/18 10:29

Notes and Definitions

DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
RPD Relative Percent Difference
** Methods marked with ** are non-accredited methods.

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Client: <u>Dugan Production</u>		Report Attention		Lab Use Only		TAT		EPA Program				
Project: <u>ARVISO #1</u>		Report due by: <u>12/19 in am</u>		Lab WO# <u>P812032</u>		Job Number <u>06094-0177</u>		1D	3D	RCRA	CWA	SDW
Project Manager: <u>Mike Sandover</u>		Attention:										
Address:		Address:								State		
City, State, Zip		City, State, Zip								NM CO UT A		
Phone: <u>330-0929</u>		Phone:										
Email:		Email:										

Time Sampled	Date Sampled	Matrix	No Containers	Sample ID	Lab Number	DRO/ORO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	TPH 418.1							Remarks
11:00	12-14-18		1	ARVISO #1	1	X	X	X			X								
11:15	12-14-18		2	ARVISO #1	2	1	1	1			1								
11:30	12-14-18		3	ARVISO #1	3	1	1	1			1								

Additional Instructions:

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action. Sampled by: Mike Sandover

Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6°C on subsequent days.

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	Lab Use Only
<u>Mike Sandover</u>	12-14-18	1618	<u>Mike Sandover</u>	12/14/18	1618	Received on ice: <u>Y</u> / N
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	T1 T2 T3
						AVG Temp °C <u>4.0</u>

Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other

Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.