

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-144  
Revised April 3, 2017

For temporary pits, below-grade tanks, and multi-well fluid management pits, submit to the appropriate NMOCD District Office.  
For permanent pits submit to the Santa Fe Environmental Bureau office and provide a copy to the appropriate NMOCD District Office.

Pit, Below-Grade Tank, or  
Proposed Alternative Method Permit or Closure Plan Application

Type of action: ☐ Below grade tank registration  
☐ Permit of a pit or proposed alternative method  
☒ Closure of a pit, below-grade tank, or proposed alternative method  
BGT1 ☐ Modification to an existing permit/or registration  
☐ Closure plan only submitted for an existing permitted or non-permitted pit, below-grade tank, or proposed alternative method

**Instructions: Please submit one application (Form C-144) per individual pit, below-grade tank or alternative request**

Please be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the environment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances.

<p>1. Operator: <u>Dugan Production Corp.</u> OGRID #: <u>006515</u> Address: <u>PO Box 420, Farmington, NM 87499-0420</u> Facility or well name: <u>Carpenter Com #1E</u> API Number: <u>30-045-23613</u> OCD Permit Number: _____ U/L or Qtr/Qtr <u>F</u> Section <u>25</u> Township <u>30N</u> Range <u>14W</u> County: <u>San Juan</u> Center of Proposed Design: Latitude <u>36.78732</u> Longitude <u>-108.26375</u> NAD83 Surface Owner: <input checked="" type="checkbox"/> Federal <input type="checkbox"/> State <input type="checkbox"/> Private <input type="checkbox"/> Tribal Trust or Indian Allotment</p>	
<p>2. <input type="checkbox"/> <b>Pit:</b> Subsection F, G or J of 19.15.17.11 NMAC Temporary: <input type="checkbox"/> Drilling <input type="checkbox"/> Workover <input type="checkbox"/> Permanent <input type="checkbox"/> Emergency <input type="checkbox"/> Cavitation <input type="checkbox"/> P&amp;A <input type="checkbox"/> Multi-Well Fluid Management Low Chloride Drilling Fluid <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> Lined <input type="checkbox"/> Unlined Liner type: Thickness _____ mil <input type="checkbox"/> LLDPE <input type="checkbox"/> HDPE <input type="checkbox"/> PVC <input type="checkbox"/> Other _____ <input type="checkbox"/> String-Reinforced Liner Seams: <input type="checkbox"/> Welded <input type="checkbox"/> Factory <input type="checkbox"/> Other _____ Volume: _____ bbl Dimensions: L _____ x W _____ x D _____</p>	
<p>3. <input checked="" type="checkbox"/> <b>Below-grade tank:</b> Subsection I of 19.15.17.11 NMAC Volume: _____ bbl Type of fluid: <u>Produced Water</u> Tank Construction material: _____ <input type="checkbox"/> Secondary containment with leak detection <input type="checkbox"/> Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off <input type="checkbox"/> Visible sidewalls and liner <input type="checkbox"/> Visible sidewalls only <input type="checkbox"/> Other _____ Liner type: Thickness _____ <input type="checkbox"/> HDPE <input type="checkbox"/> PVC <input type="checkbox"/> Other _____</p>	
<p>4. <input type="checkbox"/> <b>Alternative Method:</b> Submittal of an exception request is required. Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.</p>	
<p>5. <b>Fencing:</b> Subsection D of 19.15.17.11 NMAC (Applies to permanent pits, temporary pits, and below-grade tanks) <input type="checkbox"/> Chain link, six feet in height, two strands of barbed wire at top (Required if located within 1000 feet of a permanent residence, school, hospital, institution or church) <input type="checkbox"/> Four foot height, four strands of barbed wire evenly spaced between one and four feet <input checked="" type="checkbox"/> Alternate. Please specify <u>4'=3' Hog wire + Top Rail</u></p>	

6.

**Netting:** Subsection E of 19.15.17.11 NMAC (*Applies to permanent pits and permanent open top tanks*)☒ Screen ☐ Netting ☐ Other \_\_\_\_\_☒ Monthly inspections (If netting or screening is not physically feasible)

7.

**Signs:** Subsection C of 19.15.17.11 NMAC☒ 12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers☐ Signed in compliance with 19.15.16.8 NMAC

8.

**Variations and Exceptions:**

Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17 NMAC for guidance.

***Please check a box if one or more of the following is requested, if not leave blank:***☐ Variance(s): Requests must be submitted to the appropriate division district for consideration of approval.☐ Exception(s): Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

9.

**Siting Criteria (regarding permitting):** 19.15.17.10 NMAC***Instructions: The applicant must demonstrate compliance for each siting criteria below in the application. Recommendations of acceptable source material are provided below. Siting criteria does not apply to drying pads or above-grade tanks.*****General siting****Ground water is less than 25 feet below the bottom of a low chloride temporary pit or below-grade tank.**- ☐ NM Office of the State Engineer - iWATERS database search; ☐ USGS; ☐ Data obtained from nearby wells☐ Yes ☐ No☐ NA**Ground water is less than 50 feet below the bottom of a Temporary pit, permanent pit, or Multi-Well Fluid Management pit.**

NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells

☐ Yes ☐ No☐ NAWithin incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. **(Does not apply to below grade tanks)**

- Written confirmation or verification from the municipality; Written approval obtained from the municipality

☐ Yes ☐ NoWithin the area overlying a subsurface mine. **(Does not apply to below grade tanks)**

- Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division

☐ Yes ☐ NoWithin an unstable area. **(Does not apply to below grade tanks)**

- Engineering measures incorporated into the design; NM Bureau of Geology &amp; Mineral Resources; USGS; NM Geological Society; Topographic map

☐ Yes ☐ NoWithin a 100-year floodplain. **(Does not apply to below grade tanks)**

- FEMA map

☐ Yes ☐ No**Below Grade Tanks**

Within 100 feet of a continuously flowing watercourse, significant watercourse, lake bed, sinkhole, wetland or playa lake (measured from the ordinary high-water mark).

- Topographic map; Visual inspection (certification) of the proposed site

☐ Yes ☐ No

Within 200 horizontal feet of a spring or a fresh water well used for public or livestock consumption;.

- NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site

☐ Yes ☐ No**Temporary Pit using Low Chloride Drilling Fluid** (maximum chloride content 15,000 mg/liter)

Within 100 feet of a continuously flowing watercourse, or any other significant watercourse or within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). (Applies to low chloride temporary pits.)

- Topographic map; Visual inspection (certification) of the proposed site

☐ Yes ☐ No

Within 300 feet from a occupied permanent residence, school, hospital, institution, or church in existence at the time of initial application.

- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image

☐ Yes ☐ No

Within 200 horizontal feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, or 300feet of any other fresh water well or spring, in existence at the time of the initial application.

NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site

☐ Yes ☐ No

Within 100 feet of a wetland.

- US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site

☐ Yes ☐ No

### **Temporary Pit Non-low chloride drilling fluid**

Within 300 feet of a continuously flowing watercourse, or any other significant watercourse, or within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).

- Topographic map; Visual inspection (certification) of the proposed site

☐ Yes ☐ No

Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.

- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image

☐ Yes ☐ No

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, or 1000 feet of any other fresh water well or spring, in the existence at the time of the initial application;

- NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site

☐ Yes ☐ No

Within 300 feet of a wetland.

- US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site

☐ Yes ☐ No

### **Permanent Pit or Multi-Well Fluid Management Pit**

Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse, or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).

- Topographic map; Visual inspection (certification) of the proposed site

☐ Yes ☐ No

Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.

- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image

☐ Yes ☐ No

Within 500 horizontal feet of a spring or a fresh water well used for domestic or stock watering purposes, in existence at the time of initial application.

- NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site

☐ Yes ☐ No

Within 500 feet of a wetland.

- US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site

☐ Yes ☐ No

10.

#### **Temporary Pits, Emergency Pits, and Below-grade Tanks Permit Application Attachment Checklist:** Subsection B of 19.15.17.9 NMAC

**Instructions:** Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- ☐ Hydrogeologic Report (Below-grade Tanks) - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC
- ☐ Hydrogeologic Data (Temporary and Emergency Pits) - based upon the requirements of Paragraph (2) of Subsection B of 19.15.17.9 NMAC
- ☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- ☐ Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- ☐ Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

☐ Previously Approved Design (attach copy of design) API Number: \_\_\_\_\_ or Permit Number: \_\_\_\_\_

11.

#### **Multi-Well Fluid Management Pit Checklist:** Subsection B of 19.15.17.9 NMAC

**Instructions:** Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- ☐ Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- ☐ A List of wells with approved application for permit to drill associated with the pit.
- ☐ Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC
- ☐ Hydrogeologic Data - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC
- ☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC

☐ Previously Approved Design (attach copy of design) API Number: \_\_\_\_\_ or Permit Number: \_\_\_\_\_

12. **Permanent Pits Permit Application Checklist:** Subsection B of 19.15.17.9 NMAC

**Instructions:** Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- ☐ Hydrogeologic Report - based upon the requirements of Paragraph (1) of Subsection B of 19.15.17.9 NMAC
- ☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- ☐ Climatological Factors Assessment
- ☐ Certified Engineering Design Plans - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Dike Protection and Structural Integrity Design - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Leak Detection Design - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Liner Specifications and Compatibility Assessment - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Quality Control/Quality Assurance Construction and Installation Plan
- ☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- ☐ Freeboard and Overtopping Prevention Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Nuisance or Hazardous Odors, including H<sub>2</sub>S, Prevention Plan
- ☐ Emergency Response Plan
- ☐ Oil Field Waste Stream Characterization
- ☐ Monitoring and Inspection Plan
- ☐ Erosion Control Plan
- ☐ Closure Plan - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

13. **Proposed Closure:** 19.15.17.13 NMAC

**Instructions:** Please complete the applicable boxes, Boxes 14 through 18, in regards to the proposed closure plan.

- Type: ☐ Drilling ☐ Workover ☐ Emergency ☐ Cavitation ☐ P&A ☐ Permanent Pit ☒ Below-grade Tank ☐ Multi-well Fluid Management Pit  
☐ Alternative
- Proposed Closure Method: ☒ Waste Excavation and Removal  
☐ Waste Removal (Closed-loop systems only)  
☐ On-site Closure Method (Only for temporary pits and closed-loop systems)  
☐ In-place Burial ☐ On-site Trench Burial  
☐ Alternative Closure Method

14. **Waste Excavation and Removal Closure Plan Checklist:** (19.15.17.13 NMAC) **Instructions:** Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.

- ☐ Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC
- ☐ Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.13 NMAC
- ☐ Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings)
- ☐ Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- ☐ Re-vegetation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- ☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC

15. **Siting Criteria (regarding on-site closure methods only):** 19.15.17.10 NMAC

**Instructions:** Each siting criteria requires a demonstration of compliance in the closure plan. Recommendations of acceptable source material are provided below. Requests regarding changes to certain siting criteria require justifications and/or demonstrations of equivalency. Please refer to 19.15.17.10 NMAC for guidance.

- |   |   |
|---|---|
| Ground water is less than 25 feet below the bottom of the buried waste.<br>- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells   | <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> NA |
| Ground water is between 25-50 feet below the bottom of the buried waste<br>- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells   | <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> NA |
| Ground water is more than 100 feet below the bottom of the buried waste.<br>- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells  | <input type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> NA |
| Within 100 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse, lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).<br>- Topographic map; Visual inspection (certification) of the proposed site                        | <input type="checkbox"/> Yes <input type="checkbox"/> No                                |
| Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.<br>- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image  | <input type="checkbox"/> Yes <input type="checkbox"/> No                                |
| Within 300 horizontal feet of a private, domestic fresh water well or spring used for domestic or stock watering purposes, in existence at the time of initial application.<br>- NM Office of the State Engineer - iWATERS database; Visual inspection (certification) of the proposed site | <input type="checkbox"/> Yes <input type="checkbox"/> No                                |
| Written confirmation or verification from the municipality; Written approval obtained from the municipality   | <input type="checkbox"/> Yes <input type="checkbox"/> No                                |
| Within 300 feet of a wetland.<br>US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site   | <input type="checkbox"/> Yes <input type="checkbox"/> No                                |
| Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance   |   |



adopted pursuant to NMSA 1978, Section 3-27-3, as amended.	
- Written confirmation or verification from the municipality; Written approval obtained from the municipality	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within the area overlying a subsurface mine.	
- Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within an unstable area.	
- Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	<input type="checkbox"/> Yes <input type="checkbox"/> No
Within a 100-year floodplain.	
FEMA map	<input type="checkbox"/> Yes <input type="checkbox"/> No

16. **On-Site Closure Plan Checklist:** (19.15.17.13 NMAC) *Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.*

- ☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- ☐ Proof of Surface Owner Notice - based upon the appropriate requirements of Subsection E of 19.15.17.13 NMAC
- ☐ Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements of Subsection K of 19.15.17.11 NMAC
- ☐ Construction/Design Plan of Temporary Pit (for in-place burial of a drying pad) - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC
- ☐ Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of 19.15.17.13 NMAC
- ☐ Waste Material Sampling Plan - based upon the appropriate requirements of 19.15.17.13 NMAC
- ☐ Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings or in case on-site closure standards cannot be achieved)
- ☐ Soil Cover Design - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- ☐ Re-vegetation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- ☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC

17. **Operator Application Certification:**

I hereby certify that the information submitted with this application is true, accurate and complete to the best of my knowledge and belief.

Name (Print): \_\_\_\_\_ Title: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

e-mail address: \_\_\_\_\_ Telephone: \_\_\_\_\_

18. **OCD Approval:** ☐ Permit Application (including closure plan) ☒ Closure Plan (only) ☐ OCD Conditions (see attachment)

OCD Representative Signature: Victoria Venegas Approval Date: 12/01/2023

Title: Environmental Specialist OCD Permit Number: BGT1

19. **Closure Report (required within 60 days of closure completion):** 19.15.17.13 NMAC

*Instructions: Operators are required to obtain an approved closure plan prior to implementing any closure activities and submitting the closure report. The closure report is required to be submitted to the division within 60 days of the completion of the closure activities. Please do not complete this section of the form until an approved closure plan has been obtained and the closure activities have been completed.*

☐ Closure Completion Date: \_\_\_\_\_

20. **Closure Method:**

☒ Waste Excavation and Removal ☐ On-Site Closure Method ☐ Alternative Closure Method ☐ Waste Removal (Closed-loop systems only)

☐ If different from approved plan, please explain.

21. **Closure Report Attachment Checklist:** *Instructions: Each of the following items must be attached to the closure report. Please indicate, by a check mark in the box, that the documents are attached.*

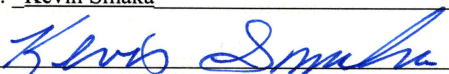
- ☒ Proof of Closure Notice (surface owner and division)
- ☐ Proof of Deed Notice (required for on-site closure for private land only)
- ☐ Plot Plan (for on-site closures and temporary pits)
- ☒ Confirmation Sampling Analytical Results (if applicable)
- ☐ Waste Material Sampling Analytical Results (required for on-site closure)
- ☒ Disposal Facility Name and Permit Number
- ☒ Soil Backfilling and Cover Installation
- ☒ Re-vegetation Application Rates and Seeding Technique
- ☐ Site Reclamation (Photo Documentation)

On-site Closure Location: Latitude \_\_\_\_\_ Longitude \_\_\_\_\_ NAD: ☐ 1927 ☐ 1983

22.

**Operator Closure Certification:**

I hereby certify that the information and attachments submitted with this closure report is true, accurate and complete to the best of my knowledge and belief. I also certify that the closure complies with all applicable closure requirements and conditions specified in the approved closure plan.

Name (Print): Kevin SmakaTitle: Regulatory EngineerSignature: Date: 11-29-23e-mail address: Kevin.Smaka@duganproduction.comTelephone: 505-325-1821 x1049

# Dugan Production Corp.

## Carpenter Com #1E

### BGT Closure Report

API# 30-045-23613

F-25-30N-14W

1850 FNL 1480 FWL

Dugan Production Corp. has closed the BGT located at the Carpenter om #1E well location. Dugan commenced closure activities on 9/20/2023 by removing the steel pit and sampling soils below the BGT, including wet or stained soils. Soil samples were collected at a depth of 8' below grade surface. Soil samples were taken to a local lab and analyzed for chlorides, benzene, toluene, ethyl benzene, xylene and total petroleum hydrocarbons.

Prior to commencing these activities notice was provided to the landowner as well as the OCD of our intent to close the pit. Proof of the notice has been included with this report.

A copy of the lab results has been included with this report. A tabulation of the results is found here:

Location	BTEX (mg/kg)	TPH (mg/kg)	Chlorides (mg/kg)
Carpenter Com #1E	0	0	607

Based on the information found in hydrogeologic reports for nearby wells, the depth to ground water is greater than 100 feet to the base of the BGT. This means that the standard of closure for chlorides is 20,000 mg/mg. As such these results meet the standard for closure under NMAC 19.15.29 and 19.15.17.

When making the depth to groundwater determination, Dugan consulted several hydrogeologic reports for BGTs in the same township. In addition, Dugan checked the iWaters database to determine depth to groundwater. No records were returned of any nearby wells. As such Dugan is depending on the data from nearby facilities. In each case the depth to ground water was greater than 100 feet.

Once approved for closure Dugan will backfill the hole with non-contaminated fill material. The topping material will be of sufficient quality to allow for adequate regrowth.

The location will be seeded with a mix compatible and appropriate for the local vegetative community in the surrounding area.

Due to the lateness in the growing season the location will be seeded, in the Spring of 2023, and monitored for reclamation purposes. The seed will be disced and drilled with a drill seeder. Once successful reclamation has occurred Dugan will provide photo evidence to the division.

The following table is the seed menu we will use to formulate the seed mix:

**Table 2. Menu based seed mix for use in reclamation for sagebrush/grass community (minimum requirement) \*\***

Common Name	Scientific Names	Variety	Season	Form	PLS lbs/acre*
<b>Plant two of the following:</b>					
Fourwing saltbush	<i>Atriplex canescens</i>	VNS	Cool	Shrub	2.0
Antelope bitterbrush	<i>Purshia tridentata</i>	VNS	Cool	Shrub	2.0
Winterfat	<i>Krascheninnikovia lanata</i>	VNS	Cool	Shrub	2.0
<b>And three of the following:</b>					
Indian ricegrass	<i>Achnatherum hymenoides</i>	Paloma or Rimrock	Cool	Bunch	4.0
Blue grama	<i>Bouteloua gracilis</i>	Alma or Hachita	Warm	Sod-forming	2.0
Galleta	<i>Pleuraphis jamesii</i>	Viva florets	Warm	Bunch/Sod-forming	3.0
Sand dropseed	<i>Sporobolus cryptandrus</i>	VNS	Warm	Bunch	0.5
Western wheatgrass	<i>Pascopyrum smithii</i>	Arriba	Cool	Sod-forming	4.0
<b>And one of the following:</b>					
Bottle brush squirreltail	<i>Elymus elymoides</i>	Tusas or VNS	Cool	Bunch	3.0
Siberian wheatgrass	<i>Agropyron fragile</i>	Vavilov	Cool	Bunch	3.0
<b>And two of the following</b>					
Small burnet	<i>Sanguisorba minor</i>	Delar	Cool	Forb	2.0
Rocky Mtn. bee plant	<i>Cleome serrulata</i>	Local collection or VNS	Cool	Forb	0.25
Blue flax	<i>Linum lewisii</i>	Apar	Cool	Forb	0.25

Solid waste would have been hauled to either Envirotech or IEI land farm facilities:

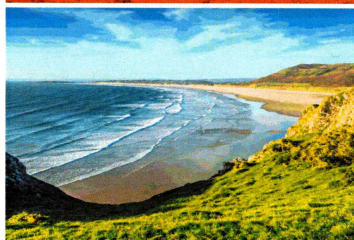
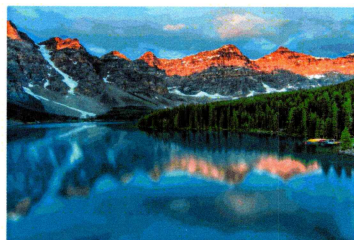
Envirotech: Permit #NM01-0011 and IEI: Permit # NM01-0010B

Liquid waste would have been hauled to Dugan's SOB SWD facility:

Dugan's Sanchez O'Brien SWD #1 (Permit # SWD-694)



Report to:  
Kevin Smaka



5796 U.S. Hwy 64  
Farmington, NM 87401

Phone: (505) 632-1881  
Envirotech-inc.com



# envirotech

*Practical Solutions for a Better Tomorrow*

## Analytical Report

Dugan Production Corp.

Project Name: BGT Closure

Work Order: E309158

Job Number: 06094-0177

Received: 9/21/2023

Revision: 1

Report Reviewed By:

Walter Hinchman  
Laboratory Director  
9/26/23

Envirotech Inc. certifies the test results meet all requirements of TNI unless noted 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. holds the Utah TNI certification NM00979 for data reported.  
Envirotech Inc. holds the Texas TNI certification T104704557 for data reported.

Date Reported: 9/26/23

Kevin Smaka  
PO Box 420  
Farmington, NM 87499



Project Name: BGT Closure  
Workorder: E309158  
Date Received: 9/21/2023 2:34:00PM

Kevin Smaka,

Thank you for choosing Envirotech, Inc. as your analytical testing laboratory for the sample(s) received on, 9/21/2023 2:34:00PM, under the Project Name: BGT Closure.

The analytical test results summarized in this report with the Project Name: BGT Closure apply to the individual samples collected, identified and submitted bearing the project name on the enclosed chain-of-custody. Subcontracted sample analyses not conducted by Envirotech, Inc., are attached in full as issued by the subcontract laboratory.

Please review the Chain-of-Custody (COC) and Sample Receipt Checklist (SRC) for any issues regarding sample receipt temperature, containers, preservation etc. To best understand your test results, review the entire report summarizing your sample data and the associated quality control batch data.

All reported data in this analytical report were analyzed according to the referenced method(s) and are in compliance with the latest NELAC/TNI standards, unless otherwise noted. Samples or analytical quality control parameters not meeting specific QC criteria are qualified with a data flag. Data flag definitions are located in the Notes and Definitions section of this analytical report.

If you have any questions concerning this report, please feel free to contact Envirotech, Inc.

Respectfully,

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**Sample Summary**

Dugan Production Corp.	Project Name:	BGT Closure	<b>Reported:</b> 09/26/23 14:20
PO Box 420	Project Number:	06094-0177	
Farmington NM, 87499	Project Manager:	Kevin Smaka	

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
Carpenter	E309158-01A	Soil	09/20/23	09/21/23	Glass Jar, 2 oz.
Monte Carlo	E309158-02A	Soil	09/20/23	09/21/23	Glass Jar, 2 oz.





## Sample Data

Dugan Production Corp. PO Box 420 Farmington NM, 87499	Project Name: BGT Closure Project Number: 06094-0177 Project Manager: Kevin Smaka	Reported: 9/26/2023 2:20:54PM
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## Carpenter

E309158-01

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
<b>Volatile Organics by EPA 8021B</b>		mg/kg	mg/kg	Analyst: IY		Batch: 2338111
Benzene	ND	0.0250	1	09/22/23	09/25/23	
Ethylbenzene	ND	0.0250	1	09/22/23	09/25/23	
Toluene	ND	0.0250	1	09/22/23	09/25/23	
o-Xylene	ND	0.0250	1	09/22/23	09/25/23	
p,m-Xylene	ND	0.0500	1	09/22/23	09/25/23	
Total Xylenes	ND	0.0250	1	09/22/23	09/25/23	
Surrogate: 4-Bromochlorobenzene-PID		94.4 %	70-130	09/22/23	09/25/23	
<b>Nonhalogenated Organics by EPA 8015D - GRO</b>		mg/kg	mg/kg	Analyst: IY		Batch: 2338111
Gasoline Range Organics (C6-C10)	ND	20.0	1	09/22/23	09/25/23	
Surrogate: 1-Chloro-4-fluorobenzene-FID		98.5 %	70-130	09/22/23	09/25/23	
<b>Nonhalogenated Organics by EPA 8015D - DRO/ORO</b>		mg/kg	mg/kg	Analyst: JL		Batch: 2338102
Diesel Range Organics (C10-C28)	ND	25.0	1	09/22/23	09/23/23	
Oil Range Organics (C28-C36)	ND	50.0	1	09/22/23	09/23/23	
Surrogate: n-Nonane		101 %	50-200	09/22/23	09/23/23	
<b>Anions by EPA 300.0/9056A</b>		mg/kg	mg/kg	Analyst: BA		Batch: 2339003
Chloride	607	20.0	1	09/25/23	09/25/23	



## QC Summary Data

Dugan Production Corp.	Project Name:	BGT Closure	Reported:
PO Box 420	Project Number:	06094-0177	
Farmington NM, 87499	Project Manager:	Kevin Smaka	9/26/2023 2:20:54PM

## Volatile Organics by EPA 8021B

Analyst: IY

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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## Blank (2338111-BLK1)

Prepared: 09/22/23 Analyzed: 09/26/23

Benzene	ND	0.0250							
Ethylbenzene	ND	0.0250							
Toluene	ND	0.0250							
o-Xylene	ND	0.0250							
p,m-Xylene	ND	0.0500							
Total Xylenes	ND	0.0250							

Surrogate: 4-Bromochlorobenzene-PID 7.56 8.00 94.5 70-130

## LCS (2338111-BS1)

Prepared: 09/22/23 Analyzed: 09/26/23

Benzene	4.26	0.0250	5.00		85.2	70-130			
Ethylbenzene	4.18	0.0250	5.00		83.6	70-130			
Toluene	4.23	0.0250	5.00		84.7	70-130			
o-Xylene	4.25	0.0250	5.00		85.0	70-130			
p,m-Xylene	8.55	0.0500	10.0		85.5	70-130			
Total Xylenes	12.8	0.0250	15.0		85.3	70-130			

Surrogate: 4-Bromochlorobenzene-PID 7.58 8.00 94.8 70-130

## Matrix Spike (2338111-MS1)

Source: E309162-22

Prepared: 09/22/23 Analyzed: 09/26/23

Benzene	4.62	0.0250	5.00	ND	92.5	54-133			
Ethylbenzene	4.53	0.0250	5.00	ND	90.6	61-133			
Toluene	4.59	0.0250	5.00	ND	91.8	61-130			
o-Xylene	4.58	0.0250	5.00	ND	91.6	63-131			
p,m-Xylene	9.25	0.0500	10.0	ND	92.5	63-131			
Total Xylenes	13.8	0.0250	15.0	ND	92.2	63-131			

Surrogate: 4-Bromochlorobenzene-PID 7.60 8.00 95.0 70-130

## Matrix Spike Dup (2338111-MSD1)

Source: E309162-22

Prepared: 09/22/23 Analyzed: 09/26/23

Benzene	4.28	0.0250	5.00	ND	85.5	54-133	7.78	20	
Ethylbenzene	4.20	0.0250	5.00	ND	84.0	61-133	7.56	20	
Toluene	4.26	0.0250	5.00	ND	85.2	61-130	7.46	20	
o-Xylene	4.26	0.0250	5.00	ND	85.2	63-131	7.24	20	
p,m-Xylene	8.58	0.0500	10.0	ND	85.8	63-131	7.52	20	
Total Xylenes	12.8	0.0250	15.0	ND	85.6	63-131	7.43	20	

Surrogate: 4-Bromochlorobenzene-PID 7.64 8.00 95.4 70-130



## QC Summary Data

Dugan Production Corp.	Project Name:	BGT Closure	Reported:
PO Box 420	Project Number:	06094-0177	
Farmington NM, 87499	Project Manager:	Kevin Smaka	9/26/2023 2:20:54PM

## Nonhalogenated Organics by EPA 8015D - GRO

Analyst: IY

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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## Blank (2338111-BLK1)

Prepared: 09/22/23 Analyzed: 09/26/23

Gasoline Range Organics (C6-C10)	ND	20.0							
Surrogate: 1-Chloro-4-fluorobenzene-FID	7.54		8.00		94.3	70-130			

## LCS (2338111-BS2)

Prepared: 09/22/23 Analyzed: 09/26/23

Gasoline Range Organics (C6-C10)	43.5	20.0	50.0		86.9	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	7.50		8.00		93.8	70-130			

## Matrix Spike (2338111-MS2)

Source: E309162-22

Prepared: 09/22/23 Analyzed: 09/26/23

Gasoline Range Organics (C6-C10)	44.7	20.0	50.0	ND	89.3	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	7.64		8.00		95.6	70-130			

## Matrix Spike Dup (2338111-MSD2)

Source: E309162-22

Prepared: 09/22/23 Analyzed: 09/26/23

Gasoline Range Organics (C6-C10)	44.3	20.0	50.0	ND	88.6	70-130	0.844	20	
Surrogate: 1-Chloro-4-fluorobenzene-FID	7.56		8.00		94.5	70-130			



## QC Summary Data

Dugan Production Corp.	Project Name:	BGT Closure	Reported:
PO Box 420	Project Number:	06094-0177	
Farmington NM, 87499	Project Manager:	Kevin Smaka	9/26/2023 2:20:54PM

## Nonhalogenated Organics by EPA 8015D - DRO/ORO

Analyst: JL

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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## Blank (2338102-BLK1)

Prepared: 09/22/23 Analyzed: 09/22/23

Diesel Range Organics (C10-C28)	ND	25.0							
Oil Range Organics (C28-C36)	ND	50.0							
Surrogate: n-Nonane	50.0		50.0		100	50-200			

## LCS (2338102-BS1)

Prepared: 09/22/23 Analyzed: 09/23/23

Diesel Range Organics (C10-C28)	255	25.0	250		102	38-132			
Surrogate: n-Nonane	52.6		50.0		105	50-200			

## Matrix Spike (2338102-MS1)

Source: E309162-25

Prepared: 09/22/23 Analyzed: 09/23/23

Diesel Range Organics (C10-C28)	254	25.0	250	ND	102	38-132			
Surrogate: n-Nonane	52.6		50.0		105	50-200			

## Matrix Spike Dup (2338102-MSD1)

Source: E309162-25

Prepared: 09/22/23 Analyzed: 09/23/23

Diesel Range Organics (C10-C28)	251	25.0	250	ND	100	38-132	1.46	20	
Surrogate: n-Nonane	53.8		50.0		108	50-200			





## QC Summary Data

Dugan Production Corp.	Project Name:	BGT Closure	Reported:
PO Box 420	Project Number:	06094-0177	
Farmington NM, 87499	Project Manager:	Kevin Smaka	9/26/2023 2:20:54PM

## Anions by EPA 300.0/9056A

Analyst: BA

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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## Blank (2339003-BLK1)

Prepared: 09/25/23 Analyzed: 09/25/23

Chloride ND 20.0

## LCS (2339003-BS1)

Prepared: 09/25/23 Analyzed: 09/25/23

Chloride 249 20.0 250 99.5 90-110

## Matrix Spike (2339003-MS1)

Source: E309118-01

Prepared: 09/25/23 Analyzed: 09/25/23

Chloride 403 20.0 250 160 97.2 80-120

## Matrix Spike Dup (2339003-MSD1)

Source: E309118-01

Prepared: 09/25/23 Analyzed: 09/25/23

Chloride 427 20.0 250 160 107 80-120 5.91 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.



## Definitions and Notes

Dugan Production Corp.  
PO Box 420  
Farmington NM, 87499

Project Name: BGT Closure  
Project Number: 06094-0177  
Project Manager: Kevin Smaka

**Reported:**  
09/26/23 14:20

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

RPD Relative Percent Difference

DNI Did Not Ignite

Note (1): Methods marked with \*\* are non-accredited methods.

Note (2): Soil data is reported on an "as received" weight basis, unless reported otherwise.





## Envirotech Analytical Laboratory

Printed: 9/21/2023 3:08:54PM

## Sample Receipt Checklist (SRC)

Instructions: Please take note of any NO checkmarks.

If we receive no response concerning these items within 24 hours of the date of this notice, all the samples will be analyzed as requested.

Client:	Dugan Production Corp.	Date Received:	09/21/23 14:34	Work Order ID:	E309158
Phone:	505-486-6207	Date Logged In:	09/21/23 15:07	Logged In By:	Caitlin Mars
Email:	kevin.smaka@duganproduction.com	Due Date:	09/28/23 17:00 (5 day TAT)		

Chain of Custody (COC)

1. Does the sample ID match the COC? Yes
2. Does the number of samples per sampling site location match the COC? Yes
3. Were samples dropped off by client or carrier? Yes
4. Was the COC complete, i.e., signatures, dates/times, requested analyses? Yes
5. Were all samples received within holding time? Yes

Note: Analysis, such as pH which should be conducted in the field, i.e., 15 minute hold time, are not included in this discussion.

Carrier: Kevin SmakaComments/ResolutionSample Turn Around Time (TAT)

6. Did the COC indicate standard TAT, or Expedited TAT? Yes

Sample Cooler

7. Was a sample cooler received? Yes
8. If yes, was cooler received in good condition? Yes
9. Was the sample(s) received intact, i.e., not broken? Yes
10. Were custody/security seals present? No
11. If yes, were custody/security seals intact? NA
12. Was the sample received on ice? If yes, the recorded temp is 4°C, i.e., 6°±2°C Yes

Note: Thermal preservation is not required, if samples are received w/i 15 minutes of sampling

13. If no visible ice, record the temperature. Actual sample temperature: 4°C

Sample Container

14. Are aqueous VOC samples present? No
15. Are VOC samples collected in VOA Vials? NA
16. Is the head space less than 6-8 mm (pea sized or less)? NA
17. Was a trip blank (TB) included for VOC analyses? NA
18. Are non-VOC samples collected in the correct containers? Yes
19. Is the appropriate volume/weight or number of sample containers collected? Yes

Field Label

20. Were field sample labels filled out with the minimum information:
  - Sample ID? Yes
  - Date/Time Collected? Yes
  - Collectors name? Yes

Sample Preservation

21. Does the COC or field labels indicate the samples were preserved? No
22. Are sample(s) correctly preserved? NA
24. Is lab filtration required and/or requested for dissolved metals? No

Multiphase Sample Matrix

26. Does the sample have more than one phase, i.e., multiphase? No
27. If yes, does the COC specify which phase(s) is to be analyzed? NA

Subcontract Laboratory

28. Are samples required to get sent to a subcontract laboratory? No
29. Was a subcontract laboratory specified by the client and if so who? NA Subcontract Lab: NA

Client Instruction

Signature of client authorizing changes to the COC or sample disposition.

Date



envirotech Inc.



### Pinon #1E (Production Tank) Hydrogeologic Report

The Pinon #1E (Production Tank) is located on Federal land on "Pinon Mesa" on the northwest margin of the San Juan Basin, in San Juan County, New Mexico. The mesa trends 3-miles east-west by 2-miles north-south. The top of the mesa is relatively flat except for areas where arroyos have incised the mesa top. The mesa is capped with the resistant Ojo Alamo and Animas Formation sandstone layers which rest unconformable on the underlying Kirtland Shale. Relief around the edges of the mesa ranges from 300 – 400 feet, most of which is vertical.

A records search of the NM Office of the State Engineer –iWATERS database was conducted on a three square mile area centered on the Pinon #1E (Production Tank) location (Exhibit 2). No water wells were located in the area. The results of the search are shown on Exhibit 1. 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 temporary pit is not located in an arroyo, the closest arroyo is over 600 feet away.

The Ojo Alamo Sandstone / Animas Formation (McDermott Member) interval extends from the surface down to a depth of approximately 180 feet and is comprised of a coarse grained alluvial sandstone interbedded with lenses of mudstone and occasional conglomeratic sandstone. The Ojo Alamo / Animas Formation may yield marginal quantities of water for livestock in other areas, however, the water quality is typically greater than 1,000 ppm total dissolved solids and high in sulfate.

The Ojo Alamo / Animas Formation interval is not a potential source of ground water in the area of the subject pit. The nearby arroyos to the south and east have breached the interval from the surface down to a depth of approximately 200 feet. Also, the interval is exposed around the rim of the mesa and sits on top of 100 – 200 feet of exposed Kirtland Shale.

The underlying Kirtland Shale ranges from a depth of approximately 180 down to a depth of approximately 1300 feet and is comprised of an upper shale member, middle sandstone member (Farmington Ss.) and a lower shale member. The middle sandstone interval is poorly developed between 450 – 550 feet and 650 – 800 feet below surface in the area of the subject pit.

Based on electric open hole logs, the iWATERS database, literature reviewed, depth to ground water ranges from 15 – 20 feet below the surface in major arroyos in the area. Moving away from the washes, ground water depth drops rapidly to greater than 220 feet below the surface. At the location of the subject pit, lesser amounts of poor quality ground water might be found at depths of approximately 450 - 550 feet and 650 – 800 feet below the surface in the laterally discontinuous sand intervals of the Kirtland Shale. Another source of poor quality ground water would be the Fruitland Coal and Pictured Cliffs Sandstone interval at a depth of approximately 1550 - 1700 feet below surface. The excessive drilling depth to reservoirs with unpredictable variations in reservoir quality and water quality has discouraged the drilling of water wells in the area.

- 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., Craig, 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., Craig, 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.G.S, Atlas HA-720-B, Sheet 1 and 2.

### Pinon #1 Hydrogeologic Report

The Pinon #1 is located on Federal land on "Pinon Mesa" along the northwest margin of the San Juan Basin in San Juan County, New Mexico. The mesa trends 3-miles east-west by 2-miles north-south. The top of the mesa is relatively flat except for areas where arroyos have incised the mesa top. The mesa is capped with the resistant Ojo Alamo / Animas sandstone layers which rest unconformable on the underlying Kirtland Shale. Relief around the edges of the mesa ranges from 300 – 400 feet, most of which is vertical.

A records search of the NM Office of the State Engineer –iWATERS database was conducted on a three square mile area centered on the Pinon #1 location (Exhibit 2). No water wells were located in the area. The results of the search are shown on Exhibit 1.

The only source of stock water on the mesa is from a steel tank designed to catch water from rain and snow melt. In the areas below Pinon Mesa, stock water 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, however, there is one minor arroyo located 30 – 50 feet south and east.

Arroyos on top of Pinon Mesa are not considered to be potential sources of ground water. The mesa receives very little rainfall and minimal snow pack in the winter. There are no ponds or springs and the arroyos do not have trapping mechanisms which would confine ground water. They sit directly on top of the Ojo Alamo / Animas sandstone interval. Any water from snow melt quickly percolates into the underlying strata. Intense rain fall quickly runs off the mesa top and gentle rainfall percolates into the underlying strata. The underlying stratum is breached by deep cutting arroyos and is exposed in the rim of the mesa 100 – 200 feet above the surrounding valley.

The Ojo Alamo / Animas sandstone interval extends from the surface down to a depth of approximately 150 feet and is comprised of a coarse grained alluvial sandstone inter-bedded with lenses of mudstone and occasional conglomeratic sandstone. The Ojo Alamo / Animas may yield marginal quantities of water for livestock in other areas; however, the water quality is typically greater than 1,000 ppm total dissolved solids and high in sulfate.

The arroyos and Ojo Alamo / Animas strata on Pinon Mesa are not considered potential sources of ground water in the area of the subject below grade tank. Nearby arroyos to the south and east, have breached the mesa from the surface down to a depth of approximately 200 feet. Also, the stratum is exposed around the rim of the mesa and sits on top of 200 – 300 feet of Kirtland Shale and the valley below.

The underlying Kirtland Shale ranges from a depth of approximately 150 down to a depth of approximately 1285 feet and is comprised of an upper shale member, middle sandstone member (Farmington Ss.) and a lower shale member. The middle sandstone interval is poorly developed between 600 - 900 feet below surface in the area of the subject pit.

Based on electric open hole logs, the iWATERS database, literature reviewed, depth to ground water at the location of the subject pit might be found at depths of 635 - 900 feet below the surface in the laterally discontinuous sand intervals of the Kirtland Shale. Another source of poor quality ground water would be the Fruitland Coal and Pictured Cliffs Sandstone interval at a depth of 1600 - 1650 feet below surface.

The excessive drilling depth to reservoirs with unpredictable variations in reservoir quality and water quality has discouraged the drilling of water wells in the area.

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.G.S, Atlas HA-720-B, Sheet 1 and 2.

### Molly Pitcher SWD #4 Hydrogeologic Report

The Molly Pitcher SWD #4 is located on Federal land on "Pinon Mesa" on the northwest margin of the San Juan Basin, in San Juan County, New Mexico. The mesa trends 3-miles east-west by 2-miles north-south. The top of the mesa is relatively flat except for areas where arroyos have incised the mesa top. The mesa is capped with the resistant Ojo Alamo and Animas Formation sandstone layers which rest unconformable on the underlying Kirtland Shale. Relief around the edges of the mesa ranges from 300 – 400 feet, most of which is vertical.

A records search of the NM Office of the State Engineer –iWATERS database was conducted on a three square mile area centered on the Molly Pitcher SWD #4 location (Exhibit 2). No water wells were located in the area. The results of the search are shown on Exhibit 1. 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 temporary pit is not located in an arroyo; the closest arroyo is over 1000 feet away.

The Ojo Alamo Sandstone / Animas Formation (McDermott Member) interval extends from the surface down to a depth of approximately 200 feet and is comprised of coarse grained alluvial sandstones inter-bedded with lenses of mudstone and occasional conglomeratic sandstone. The Ojo Alamo / Animas Formation interval may yield marginal quantities of water for livestock in other areas; however, the water quality is typically greater than 1,000 ppm total dissolved solids and high in sulfate.

The Ojo Alamo / Animas Formation interval is not a potential source of ground water in the area of the subject pit. The nearby arroyos to the south and east have breached the interval from the surface down to a depth of approximately 200 feet. Also, the interval is exposed around the rim of the mesa and sits on top of 100 – 200 feet of exposed Kirtland Shale.

The underlying Kirtland Shale ranges from a depth of approximately 200 down to a depth of approximately 1350 feet and is comprised of an upper shale member, middle sandstone member (Farmington Ss.) and a lower shale member. The middle sandstone interval is poorly developed between 400 – 500 feet and 650 – 800 feet below the surface in the area of the subject pit.

Based on electric open hole logs, the iWATERS database, literature reviewed, depth to ground water ranges from 15 – 20 feet below the surface in major arroyos in the area. Moving away from the arroyos, ground water depth drops rapidly to greater than 220 feet below the surface. At the location of the subject pit, lesser amounts of poor quality ground water might be found at depths of approximately 400 - 500 feet and 650 – 800 feet below the surface in the laterally discontinuous sand intervals of the Kirtland Shale. Another source of poor quality ground water would be the Fruitland Coal and Pictured Cliffs Sandstone interval at a depth of approximately 1650 - 1700 feet below surface. The excessive drilling depth to reservoirs with unpredictable variations in reservoir quality and water quality has discouraged the drilling of water wells in the area.

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., Craig, 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., Craig, 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.G.S, Atlas HA-720-B, Sheet 1 and 2.











**Kevin Smaka**

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**From:** Kevin Smaka  
**Sent:** Tuesday, September 19, 2023 3:19 PM  
**To:** 'Barr, Leigh, EMNRD'; 'Adeloye, Abiodun A'  
**Cc:** Tyra Feil; Carlos Ramos; Dalvin Harrison  
**Subject:** RE: BGT Closure Sampling

For all people concerned, we will start at the Monte Carlo #1 and move to the Carpenter.

Kevin Smaka P.E.  
Regulatory Engineer  
Dugan Production Corp  
505-486-6207

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**From:** Kevin Smaka  
**Sent:** Friday, September 15, 2023 2:08 PM  
**To:** 'Barr, Leigh, EMNRD' <leighp.barr@emnrd.nm.gov>; 'Adeloye, Abiodun A' <aadeloye@blm.gov>  
**Cc:** Tyra Feil <Tyra.Feil@duganproduction.com>; Carlos Ramos <Carlos.Ramos@duganproduction.com>; Dalvin Harrison <Dalvin.Harrison@duganproduction.com>  
**Subject:** BGT Closure Sampling

Dugan will be closing 2 BGTs and collecting soil samples this coming Wednesday, 9/20/23 @ 10:00 AM. We will be collecting samples from Dugan's Monte Carlo #1 wellsite and Dugan's Carpenter #1E well site.

Here are the sites information:

Monte Carlo #1  
30-045-25866  
K-07-30N-14W  
1450 FSL 1450 FWL

Carpenter Com #1E  
30-045-23613  
F-25-30N-14W  
1850 FNL 1480 FWL

The Monte Carlo #1 is a fee lease and a certified letter has been mailed to the land owner of our planned closure. A copy of that notice will be included in the closure report when the C-144 is filed.

Kevin Smaka P.E.  
Regulatory Engineer  
Dugan Production Corp  
505-486-6207

**District I**  
1625 N. French Dr., Hobbs, NM 88240  
Phone:(575) 393-6161 Fax:(575) 393-0720  
**District II**  
811 S. First St., Artesia, NM 88210  
Phone:(575) 748-1283 Fax:(575) 748-9720  
**District III**  
1000 Rio Brazos Rd., Aztec, NM 87410  
Phone:(505) 334-6178 Fax:(505) 334-6170  
**District IV**  
1220 S. St Francis Dr., Santa Fe, NM 87505  
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS  
  
Action 289614

CONDITIONS

Operator:  DUGAN PRODUCTION CORP PO Box 420 Farmington, NM 87499	OGRID:  6515
	Action Number:  289614
	Action Type:  [C-144] Below Grade Tank Plan (C-144B)

CONDITIONS

Created By	Condition	Condition Date
vvenegas	19.15.17.13.H. The re-vegetation and reclamation obligations imposed by other applicable federal or tribal agencies on lands managed by those agencies shall supersede these provisions and govern the obligations of any operator subject to those provisions, provided that the other requirements provide equal or better protection of fresh water, human health and the environment. (e) The operator shall notify the division when reclamation and re-vegetation are complete.	12/1/2023