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

Type of action:

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

For temporary pits, closed-loop systems, and below-grade tanks, submit to the appropriate NMOCD District Office.
For permanent pits and exceptions submit to the Santa Fe Environmental Bureau office and provide a copy to the appropriate NMOCD District Office.

83914	
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#### Pit, Closed-Loop System, Below-Grade Tank, or Proposed Alternative Method Permit or Closure Plan Application

EX Permit of a pit, closed-loop system, below-grade tank, or proposed alternative method Closure of a pit, closed-loop system, below-grade tank, or proposed alternative method

Modification to an existing permit Closure plan only submitted for an existing permitted or non-permitted pit, closed-loop system, below-grade tank, or proposed alternative method
Instructions: Please submit one application (Form C-144) per individual pit, closed-loop system, 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
Operator: Dugan Production Corp.  OGRID#: 006515
Address: 709 East Murray Drive, Farmington, New Mexico 87401
Facility or well name: St. Moritz SWD #2
API Number: 30-045-3528) OCD Permit Number:
U/L or Qtr/Qtr D Section 26 Township 24N Range 10W County San Juan County
Center of Proposed Design: Latitude 36.28369 N Longitude 107.86301 W NAD. □1927 ▼ 1983
Surface Owner: X Federal  State Private Tribal Trust or Indian Allotment
2.
∑ Pit: Subsection F or G of 19 15.17.11 NMAC
Temporary: X Drilling Workover
☐ Permanent ☐ Emergency ☐ Cavitation ☐ P&A
X Lined ☐ Unlined Liner type: Thickness 20 mil       MI X LLDPE ☐ HDPE ☐ PVC ☐ Other
X String-Reinforced
Liner Seams: Welded Factory Other Volume: 7000 bbl Dimensions: L 100'x W 200' x D 10'
3.
Closed-loop System: Subsection H of 19.15.17.11 NMAC
Type of Operation.  P&A Drilling a new well Workover or Drilling (Applies to activities which require prior approval of a permit or notice of intent)
Drying Pad Above Ground Steel Tanks Haul-off Bins Other
Lined Unlined Liner type: Thicknessmil LLDPE HDPE PVC Other
Liner Seams: Welded Factory Other Other
Liner Seams: Welded Factory Other    Subsection   Of 19.15.17   11 NMAC
Below-grade tank: Subsection I of 19.15.17 11 NMAC
1 volume tot Type of field \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
Tank Construction material:
Tank Construction material:  Secondary containment with leak detection Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off  Visible sidewalls and liner Visible sidewalls only Other
☐ Visible sidewalls and liner ☐ Visible sidewalls only ☐ Other
Liner type: Thicknessmil
5.
Alternative Method:
Submittal of an exception request is required. Exceptions must be submitted to the Santa Fe Environmental Burgay office for consideration of approval

Fencing: Subsection D of 19.15.17.11 NMAC (Applies to permanent pits, temporary pits, and below-grade tanks)	
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)	nospital,
Four foot height, four strands of barbed wire evenly spaced between one and four feet	
X Alternate. Please specify 4' Hogwire	
7.	100
Netting: Subsection E of 19.15.17.11 NMAC (Applies to permanent pits and permanent open top tanks)	
Screen Netting Other  Marthly investigation (15 or time assessment absolute for its contraction)	
Monthly inspections (If netting or screening is not physically feasible)	
8. 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 19.15.3.103 NMAC	
Gigned in compniance with 17.15.5.105 North	
9. Administrative Approvals 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:  Administrative approval(s): Requests must be submitted to the appropriate division district or the Santa Fe Environmental Bureau	office for
consideration of approval.	
Exception(s): Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.	
10 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 accep	
material are provided below.  Requests regarding changes to certain siting criteria may require administrative approval from the appro office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of a	
Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance. Siting criteria does not apply to dry	
above-grade tanks associated with a closed-loop system.	
Ground water is less than 50 feet below the bottom of the temporary pit, permanent pit, or below-grade tank.  - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☒ No
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).	Yes X No
- Topographic map; Visual inspection (certification) of the proposed site	
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.	Yes X No
<ul> <li>(Applies to temporary, emergency, or cavitation pits and below-grade tanks)</li> <li>Visual inspection (certification) of the proposed site; Aerial photo; Satellite image</li> </ul>	□ NA
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.	☐ Yes ☐ No
(Applies to permanent pits)	⊠ NA
- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	Yes X No
Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application.	L Tes Ed No
- NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site	
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance	☐ Yes ☒ No
adopted pursuant to NMSA 1978, Section 3-27-3, as amended.  - Written confirmation or verification from the municipality; Written approval obtained from the municipality	
Within 500 feet of a wetland.	
- US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	Yes X No
Within the area overlying a subsurface mine.	Yes X No
- Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	
Within an unstable area.  - Engineering measures incorporated into the design: NM Bureau of Geology & Mineral Resources: USGS; NM Geological	Yes X No
Society; Topographic map	
Within a 100-year floodplain.	☐ Yes X No
- FEMA map	

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  Sting 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: 30-045- or Permit Number:
Closed-loop Systems 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.  Geologic and Hydrogeologic Data (only for on-site closure) - based upon the requirements of Paragraph (3) of Subsection B of 19.15.17.9  Siting Criteria Compliance Demonstrations (only for on-site closure) - 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:
Previously Approved Operating and Maintenance Plan API Number(Applies only to closed-loop system that use
above ground steel tanks or haul-off bins and propose to implement waste removal for closure)
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   Preeboard 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   Erosion Control Plan   Erosion Control 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
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 Closed-loop System Alternative
Proposed Closure Method: Waste Excavation and Removal Waste Removal (Closed-loop systems only)
<ul> <li>✓ On-site Closure Method (Only for temporary pits and closed-loop systems)</li> <li>✓ In-place Burial</li> <li>✓ On-site Trench Burial</li> </ul>
Alternative Closure Method (Exceptions must be submitted to the Santa Fe Environmental Bureau for consideration)
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 F 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 G of 19.15.17.13 NMAC

Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only: (19.15.17.13.D. Instructions: Please indentify the facility or facilities for the disposal of liquids, drilling fluids and drill cuttings. Use attachment if national facilities are required.	O NMAC) more than two
Disposal Facility Name: Disposal Facility Permit Number	
Disposal Facility Name Disposal Facility Permit Number:	
Will any of the proposed closed-loop system operations and associated activities occur on or in areas that will not be used for future server Yes (If yes, please provide the information below) No	
Required for impacted areas which will not be used for future service and operations:  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 I of 19.15.17.13 NMAC  Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC	3
17. 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 sour provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate districtions of exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of approval. Justif demonstrations of equivalency are required. Please refer to 19.15.17.10 NMAC for guidance.	rict office or may be
Ground water is less than 50 feet below the bottom of the buried waste.  - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☐ No ☑ NA
Ground water is between 50 and 100 feet below the bottom of the buried waste  - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☐ No ☒ NA
Ground water is more than 100 feet below the bottom of the buried waste.  - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	∑ Yes  ☐ No ☐ NA
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 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 private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application.  - NM Office of the State Engineer - iWATERS database; Visual inspection (certification) of the proposed site	☐ Yes ☒ 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	☐ 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
Within the area overlying a subsurface mine.  - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	☐ Yes 🗓 No
Within an unstable area.  - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	☐ Yes 🛭 No
Within a 100-year floodplain FEMA map	☐ Yes 🗓 No
On-Site Closure Plan Checklist: (19.15.17.13 NMAC) Instructions: Each of the following items must be attached to the closure plan 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 F of 19.15.17.13 NMAC  Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements 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 19.15.17.13 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 Subsection F of 19.15.17.13 NMAC  Waste Material Sampling Plan - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC  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 G of 19.15.17.13 NMAC	15.17.11 NMAC

Operator Application Certification:  I hereby certify that the information submitted with this application i	is true, accurate and complete to the best of my knowledge and belief.
Name (Print) Kurt Fagrelius	Title: Vice President, Exploration
Signature: Kust Fegurin	Date: May 20, 2011
e-mail address kfagrelius@duganproduction.com	Telephone: 505-325-1821(o), 505-320-8248 (H)
OCD Approval: Permit Application (including closure plan)  OCD Representative Signature:	Approval Date: 6/15/2011
Title: Compliance Officer	OCD Permit Number:
21. Closure Report (required within 60 days of closure completion): Instructions: Operators are required to obtain an approved closure The closure report is required to be submitted to the division within section of the form until an approved closure plan has been obtaine	plan prior to implementing any closure activities and submitting the closure report.  60 days of the completion of the closure activities. Please do not complete this
Closure Method:  Waste Excavation and Removal On-Site Closure Method If different from approved plan, please explain.	☐ Alternative Closure Method ☐ Waste Removal (Closed-loop systems only)
23. Closure Report Regarding Waste Removal Closure For Closed-lo	oop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only:
	liquids, drilling fluids and drill cuttings were disposed. Use attachment if more than
two facilities were utilized.	
Disposal Facility Name:	Disposal Facility Permit Number:
Disposal Facility Name:	Disposal Facility Permit Number
Were the closed-loop system operations and associated activities perf  Yes (If yes, please demonstrate compliance to the items below	formed on or in areas that will not be used for future service and operations?    No
Required for impacted areas which will not be used for future service  Site Reclamation (Photo Documentation)  Soil Backfilling and Cover Installation  Re-vegetation Application Rates and Seeding Technique	and operations:
24.	
	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)  Plot Plan (for on-site closures and temporary pits)  Confirmation Sampling Analytical Results (if applicable)  Waste Material Sampling Analytical Results (required for on-site closures)  Disposal Facility Name and Permit Number  Soil Backfilling and Cover Installation  Re-vegetation Application Rates and Seeding Technique	site closure)
Site Reclamation (Photo Documentation) On-site Closure Location: Latitude	LongitudeNAD. □1927 □ 1983
25.	
Operator Closure Certification:  I hereby certify that the information and attachments submitted with the control of the contr	this closure report is true, accurate and complete to the best of my knowledge and sure requirements and conditions specified in the approved closure plan.
Name (Print):	Title:
Signature:	Date:
e-mail address:	Telephone:

#### St. Moritz SWD #2 Hydrogeologic Data

The St. Moritz SWD #2 is located on Federal land on the Chaco Slope area of the San Juan Basin, in San Juan County, New Mexico. The area is characterized by an arid, westward sloping, gentle hilly terrain covered with sage, grass and isolated stands of pinon and juniper. It is well drained by numerous arroyos that carry water during seasonal periods (rainstorms and snowmelt) to the west.

A records search of the NM Office of the State Engineer –iWATERS database was conducted on a three square mile area centered on the St. Moritz SWD #2 location (Exhibit 2). One water well is located 8,950-feet southeast of the proposed temporary pit. This well was drilled to a total depth of 442-feet and the depth to water was reported at 284-feet. 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 and stock tanks constructed on surface shale in the upper reaches and confluences of arroyos. The temporary pit is not located in an arroyo. The closest arroyo is 300-feet south of the temporary pit and there is a stock tank located 900-feet east and upslope from the proposed temporary pit (Exhibit 2).

The Nacimiento Formation extends from the surface down to 480-feet. From surface down to 420-feet the section is all mudstone / shale with only a trace of siltstone. This section is not expected to contain groundwater.

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).

The underlying Ojo Alamo Sandstone ranges from 480-feet down to a depth of 565-feet and is comprised of a coarse grained alluvial sandstone inter-bedded with lenses of mudstone and occasional conglomeratic sandstone. The Ojo could provide a greater volume of poor quality groundwater.

Based on electric open hole logs, the iWATERS database, literature reviewed, poor quality groundwater might be found at a depth 480-565 feet from the Ojo Alamo Sandstone. A deeper source of poor quality groundwater would be the Fruitland Coal / Pictured Cliffs Sandstone interval from 1250-1420 feet. The water quality is very poor (>15,000 ppm TDS); water that is recovered with natural gas production is disposed of in nearby salt water disposal wells (analysis of this water is available upon request from Dugan Production). The proposed St. Moritz SWD #2 disposal well will be used as a disposal source for water produced from the Fruitland and Pictured Cliffs interval in the area.

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.

This Hydrogeologic Report was prepared by Mr. Kurt Fagrelius, Geologist for Dugan Production. Mr. Fagrelius has been employed as a geologist for Dugan for the past 33-years, received a MS in Geology from NMIMT in Socorro, NM and a BS in Geology from FLC in Durango, CO.

- 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.



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

No records found.

PLSS Search:

Section(s): 22-27

Township: 24N

Range: 10W



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

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest) (NAD83 UTM in meters)

POD Number

**Depth Depth Water** 

basin Use County 6416 4 Sec Tws Rng

Y Well WaterColumn

SJ 01714

3 4 36 24N 10W

244334 4017107\*

Average Depth to Water:

284 feet

Minimum Depth: 284 feet

Maximum Depth: 284 feet

Record Count: 1

**PLSS Search:** 

**Section(s)**: 34-36

Township: 24N

Range: 10W

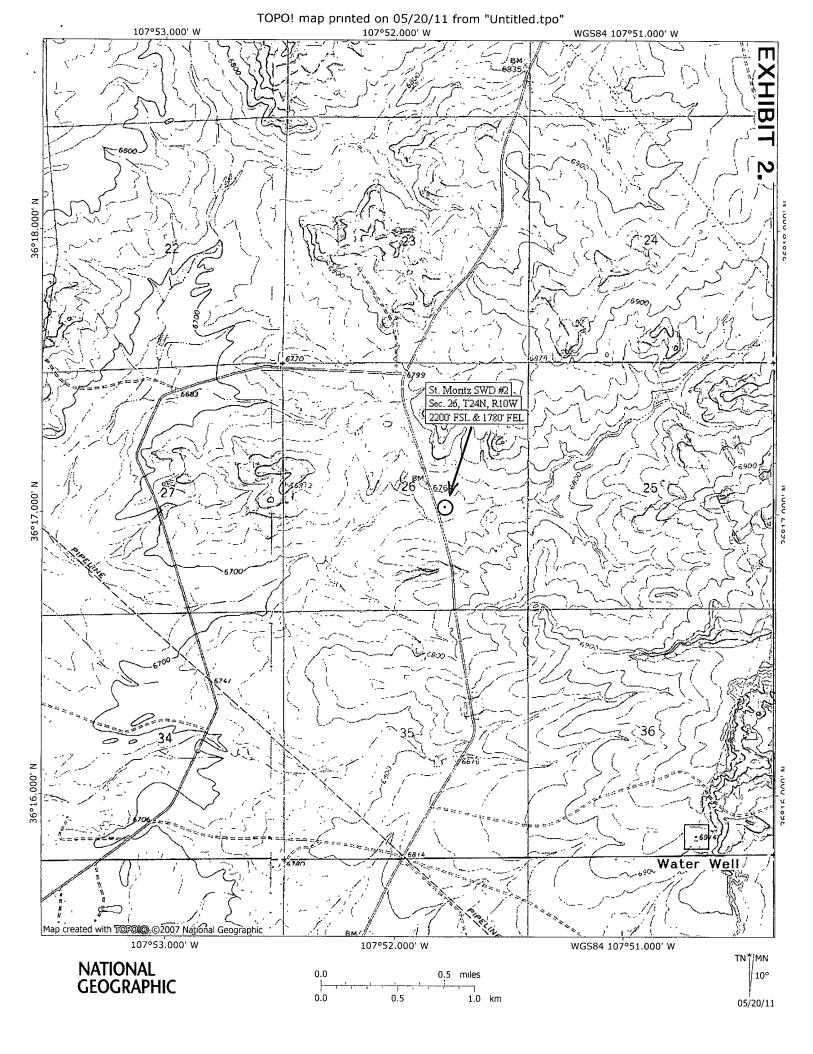
#### Siting Criteria for the St. Moritz SWD #2

- 1. Ground water is not less than 50-feet below the bottom of the temporary pit. Ground water is greater than 100-feet below the bottom of the temporary pit.
- 2. The temporary pit is not within 300-feet of a continuously flowing water course, or 200-feet of any other watercourse, lakebed, sinkhole, or playa lake (measured from ordinary high water mark). See the attached Topographic map (Exhibit 2) and Visual Inspection Certification of the location and area around the subject temporary pit.
- 3. The temporary pit is not within 300-feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. See the attached Satellite Image (Exhibit 3) and Visual Inspection certification of the location and area around the subject temporary pit.
- 4. The temporary pit is not within 500-feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000-horizontal feet of any other fresh water well or spring, in existence at the time of initial application. See the attached NM Office of the State Engineer iWATERS database search (Exhibit 4) and Visual Inspection certification of the location and area around the subject temporary pit.
- 5. The temporary pit is not located within the 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. See the attached Topographic map of the location and area around the subject temporary pit.
- 6. The temporary pit is not located within 500-feet of a wetland. See the attached Topographic map and Visual Inspection Certification of the location and area around the subject temporary pit.
- 7. The temporary pit is not located within the area overlying a subsurface mine. See the attached Mine, Mills and Quarry Map of New Mexico (New Mexico, EMND 2008) (Exhibit 5) showing the location and area around the subject pit.
- 8. The temporary pit is not located within an unstable area. See the attached Topographic map of the location and area around the subject temporary pit.
- 9. The temporary pit is not located within a 100-year floodplain area. See the attached FEMA map (Exhibit 6) of the 100 year floodplain showing the location and area around the subject pit.

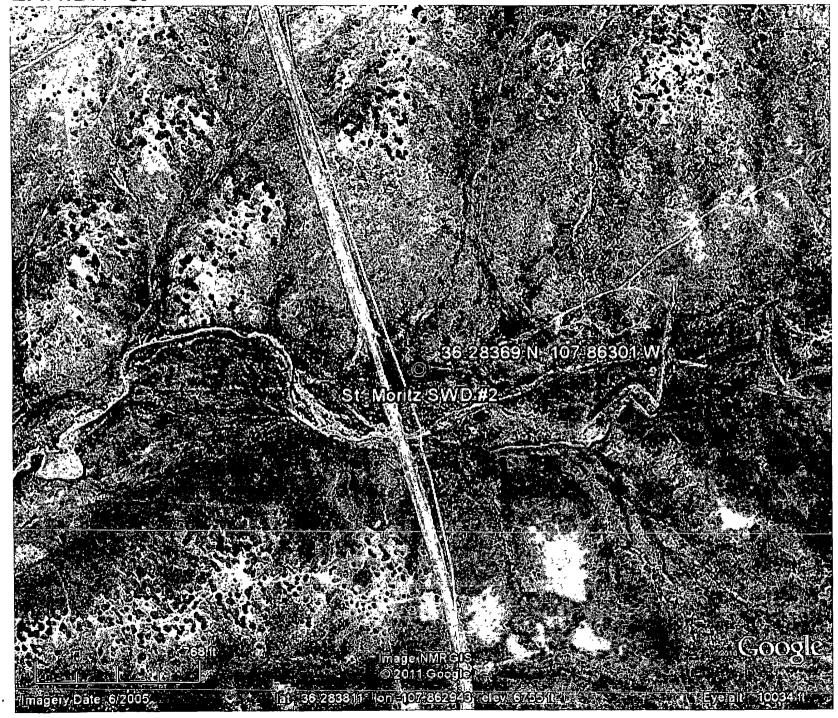
#### St. Moritz SWD #2 Visual Inspection Certification

I, Kurt Fagrelius, Vice President of Exploration for Dugan Production Corp. 709 East Murray Drive, Farmington, New Mexico hereby certify that I or persons under my direct supervision, prepared the attached exhibits and conducted a Visual Inspection of the location and area around the St. Moritz SWD #2 temporary pit (May 17, 2011) and that this application is in full compliance with all siting criteria and standards for temporary pits established by the State of New Mexico, Energy Minerals and Natural Resources Department 19.15.17.10 NMAC.

Kurt Fagrelius



#### EXHIBIT 3.





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

**EXHIBIT 4.** 

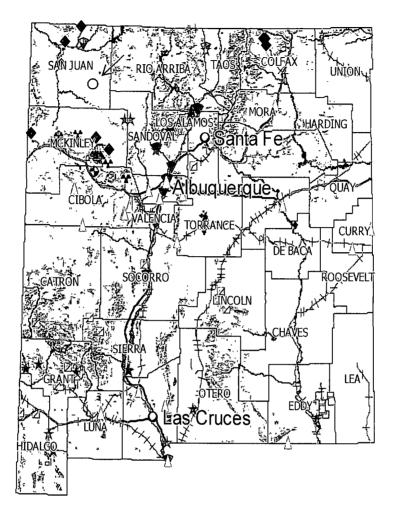
No records found.

PLSS Search:

Section(s): 26

Township: 24N

Range: 10W



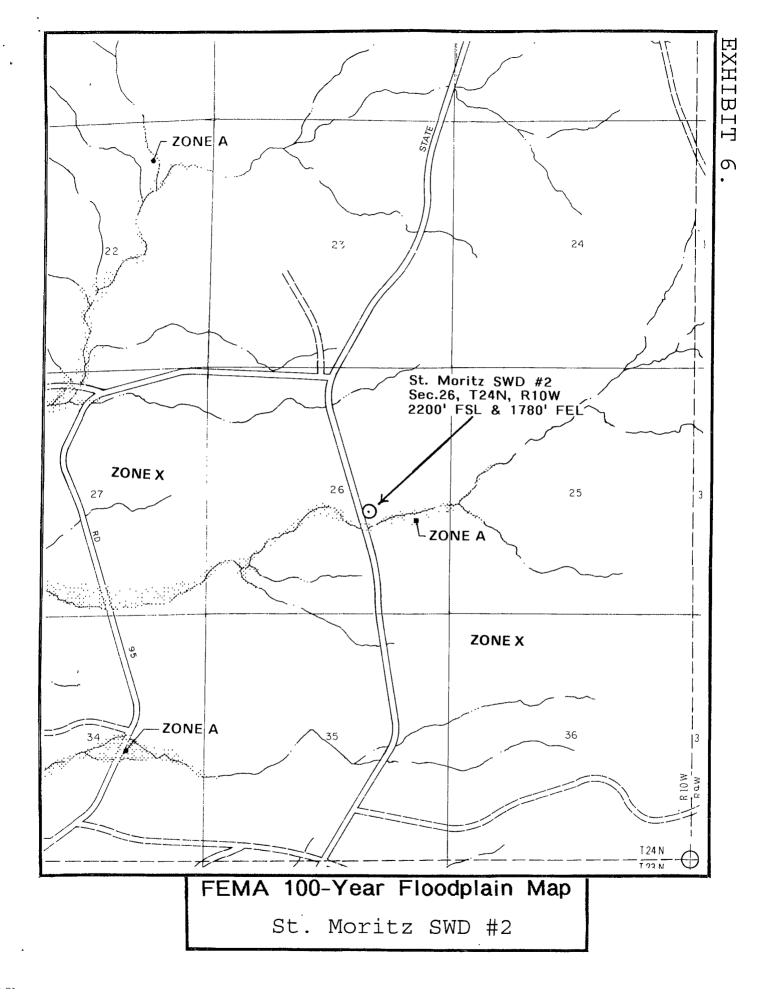
### Mine, Mills and Quarry Map of New Mexico

Dugan Production Corp.

St. Moritz SWD #2

Taken from the New Mexico Energy, Minerals and Natural Resources Department.

Mining and Minerals Division.



#### St. Moritz SWD #2 Request for Administrative Approval

Administrative approval is hereby requested for an alternative to the fencing design and steel marker to be set at the center of burial site following on-site pit closure for the St. Moritz SWD #2 temporary pit.

The requests for administrative approval cited above are needed to help minimize environmental impact and increase safety and protect wildlife and public health. The alternatives proposed will protect fresh water, public health, safety and the environment more effectively than the design and construction specifications established by the State of New Mexico, Energy Minerals and Natural Resources Department do in rule 19.15.17.11 NMAC.

1. The proposed alternative fencing design will include T-posts spaced 10-feet apart with T-posts will be located outside of the liner apron and burial trench. Hog-wire / field fence 4-feet in height will be strung tightly and anchored to the top and bottom of each T-post. Small holes (3" high X 6" wide) in the hog-wire will be located at ground level with increasing larger holes (up to 7" high X 6" wide) located at the top of the fence. Anchor braces will be put at all four corners to strengthen and tighten the fence. During drilling or work-over operations, there will be no fence adjacent to the rig. However, the ends of fence will be attached to the front and rear of rig when responsible personnel are not on-site. Once the rig is moved off, the third side of fence will be constructed in the same manner. This fence design (developed over the last 30-years) has proven to be very effective controlling unauthorized access to temporary drilling pits.

The existing rule (19.15.17.11.D.3) would require the operator to fence the temporary pit with a four foot fence that has at least four strands of barbed wire evenly spaced in the interval between on foot and four feet above the ground level. The proposed fencing alternative would provide better security against unauthorized access to temporary drilling pits. The smaller holes in hog-wire (3" X 6" up to 7" X 6") is more effective at controlling unauthorized access by the public and wildlife than 4-strands of barbed wire spaced 12" apart.

The proposed fence around the temporary pit will be constructed and operated in a manner that prevents unauthorized access and shall maintain the fence in good condition to protect the public and wildlife.

2. The proposed alternative steel marker set at the center of the on-site burial following onsite-pit closure will be a flat steel marker. The marker will be (24" X 24") and will have the operator name, lease name, well number, location (UL, Sec., Twp., Rge.) and that it designates an "on-site burial location" lettering welded on the top side with a 4" threaded collar welded to the bottom side. The marker will be set at ground level and attached to a 4" diameter pipe that is cemented in a hole three feet deep. When the well is abandoned, a steel riser that is 4" in diameter, extending 4' above the ground will be welded to the pipe anchored in cement below the surface. The riser will have lettering welded on side showing operator name, well number, location (UL, Sec., Twp., and Rge.) and that it designates an on-site burial location.

The existing rule (19.15.17.13.F.1.d) would require the operator to install a 4" diameter steel marker a minimum 3' deep in cement and extending at least 4' above ground. The proposed steel marker alternative would be much safer than the existing rule. The steel marker will be located approximately 15-20 feet from the well head. A marker that stands 4' tall would present a safety hazard for personnel and vehicle traffic working around the well-head.

The requests for administrative approval cited above are needed to help minimize environmental impact, increase safety and protect wildlife and public health. The alternatives proposed will protect fresh water, public health, safety and the environment more effectively than the design and construction specifications established by the State of New Mexico, Energy Minerals and Natural Resources Department do in rule 19.15.17.11 NMAC.

#### St. Moritz SWD #2 Design and Construction Plan

- 1. The St. Moritz SWD #2 temporary pit will be designed and constructed in accordance with the following requirements:
- 2. Temporary pit will be designed and constructed to contain liquids and solids and prevent contamination of fresh water and protect public health and the environment.
- 3. Stockpile topsoil prior to digging pit, keep separate from subsoil and use as final cover and fill when closing pit.
- 4. Sign-12" by 24" with operator name, lease name, well #, location (unit letter, qtr/qtr, Sect., Twp., and Rge.) and emergency phone #'s will be posted on location. Sign will be posted in a location where it can be easily read.
- 5. Fencing around the St. Moritz SWD #2 temporary pit will be constructed and operated in a manner that prevents unauthorized access and shall be maintained in good condition to protect the public and wildlife. St. Moritz SWD #2 temporary pit is not located within 1000-feet of house, school, hospital or church. Administrative Approval is requested for alternative design (4'-hogwire). See attachment.
- 6. St. Moritz SWD #2 temporary pit will be designed and constructed to ensure the confinement of liquids and prevent unauthorized releases. Pit will be constructed with a firm foundation and interior slopes, smooth and free of rocks or sharp edges (2H: 1V slopes on 4-sides).
- 7. Liner will be 20-mil string reinforced LLDPE, impervious material, resistant to UV light, hydrocarbons, salt, acidic or basic liquids. Liner seams will be minimized, oriented up and down, not across slopes, will have factory seam welds. Construction methods to avoid excessive stress-strain on the liner will be used. Geo-textile will be used under the liner as needed to reduce localized stress-strain on the liner in order to prevent punctures or tears in the liner.
- 8. Anchor trenches for the liner will be at least 18-inches deep.
- 9. A header, diverter, smooth flanged fittings or other devices that prevent damage to the liner by fluid force or mechanical damage at any point of discharge into or suction from the pit will be used.
- 10. Diversionary berms, ditches or sloping will be constructed as necessary to prevent surface run-off from flowing into pit.

#### St. Moritz SWD #2 Operational Requirements

- 1. The St. Moritz SWD #2 temporary pit will be maintained and operated in accordance with the following requirements:
- 2. Recycle, re-use, reclaim or dispose of fluids in a manner approved by the NMOCD rules.
- 3. Drilling fluids will be transferred to the next temporary (drilling reserve) pit to be used again in drilling the next well. Free fluid that shakes out of mud will be transferred to the Dugan operated Sanchez O'Brien SWD #1 disposal well.
- 4. Do not dispose of solid waste, trash, debris or hazardous material into the pit.
- 5. If the pit liner becomes torn or damaged, notify the appropriate NMOCD district office within 48-hours and repair or replace and remove all liquid above leak (505) 334-6178. If a hole or tear occurs below the fluid level, call the NMOCD office within 24-hours.
- 6. All injection or withdrawal of liquids from a pit using a water truck will be done through a header, diverter or other device that prevents damage to the liner by erosion, fluid jets or impact from installation and removal of hoses or pipes.
- 7. Discharge line from pit and suction lines to mud pumps will be equipped with smooth flanged fittings and hoses to prevent damage to the pit liner.
- 8. BOP manifolds will be constructed, installed and staked down in a manner that prevents damage to the pit liner.
- 9. Temporary pit will be constructed and operated in a manner that prevents surface water from entering the pit. Diversion berms will be constructed along the upslope sides of pit.
- 10. Oil absorbent booms or other devices to contain and remove oil from pit's surface will be kept onsite until final pit closure.
- 11. Discharge only fluids generated during drilling or work-over operations into the pit.
- 12. Immediately following drilling or work-over operations, remove any oil from pit surface.
- 13. Maintain at least 2-feet of freeboard in pit at all times.
- 14. Keep log book of daily inspections during drilling and work-over operations.
- 15. Keep log book of weekly inspections after rig is moved off, until final pit closure.
- 16. Note date of drilling or work-over rig release on form C-105 or C-103.

#### St. Moritz SWD #2 Closure Plan-Methods, Procedures and Protocols

- 1. Comply with siting criteria for temporary pits established by the State of New Mexico, Energy Minerals and Natural Resources Department 19.15.17.10 NMAC.
- 2. Provide the NMOCD district office at least 72-hours notice but no greater than 1 week prior to any closure operations. Notice will include operator name, well name and number, API number, and location (unit letter, section, township and range).
- 3. Provide the surface owner notice of the operator's proposal of an on-site closure method. Proof of notice will be attached to the permit application. Also, proof of closure notice will be provided by certified mail to surface owner after closure. Proof of notice will be attached to final closure report.
- 4. Remove all liquid from pit and reclaim, re-use or dispose of at an NMOCD approved facility. Upon completion of drilling operations, drilling mud will be vacuumed from pit and transported to the next reserve pit for re-use at another drilling location. After the remaining mud settles, the free water that shakes out and any free water left over from completion operations will be hauled to the Dugan Production operated Sanchez O'Brien #1 SWD located 1650 feet from the South line and 990 feet from the West line (Unit L) of Section 6, Township 24 North, Range 9 West NMPM, San Juan County, New Mexico. The disposal facility was permitted by the NMOCD with Administrative Order SWD-694.
- 5. Remove all fluids from temporary pit within 30-days and close within 6-months following release of drilling rig.
- 6. Air dry pit contents and stabilize or solidify to a load bearing capacity sufficient to support the temporary pit's final cover.
- 7. Collect a five point, composite sample of the pit contents to demonstrate that Benzene, BTEX, the GRO and DRO combined fraction, TPH. and chlorides (depth to groundwater from bottom of pit is greater than 100-feet), do not exceed the standards as specified in 19.15.17.9.B or the background concentration, whichever is greater.

Components	Test Method	Limit (mg/kg)
Benzene	EPA SW-846 8021B or 8260B	0.2
BTEX	EPA SW-846 8021B or 8260B	50
TPH	EPA SW-846 418.1	2500
GRO/DRO	EPA SW-846 8015M	500
Chlorides	EPA 300.1	1000 / 500

8. Other methods if the standards in 19.15.17.9.B can not be met will include: The pit contents may be mixed to a ratio not to exceed 3:1, un-contaminated soil or other material to pit contents. A second five point, composite sample of the contents after treatment or stabilization will be taken to demonstrate that the contents do not exceed the standards. If the second soil analyses do no satisfy the closure standards, the operator will close the temporary pit using the waste excavation and removal method.

- 9. Cut pit liner off at the mud line (solids level); remove liner and apron and transport to a NMOCD approved facility for disposal.
- 10. Stockpiled sub-surface soil will be used to backfill pit and re-contour well pad (to a final or intermediate cover that blends with the surrounding topography). A minimum of four feet of compacted, non-waste containing, earthen material will be used as backfill.
- 11. Stockpiled surface soil will be used as a cover over the backfilled pit and disturbed areas of the well pad no longer needed for production operations. The soil cover will include either the background thickness of top soil or one foot of suitable material to establish vegetation at the site whichever is greater.
- 12. The area will be re-seeded as per BLM guidelines. Re-seeding will be repeated until 70% of the native natural cover is achieved and maintained for two successive growing seasons. The first growing season after the pit is closed the disturbed area will be re-seeded. The seeding method will be to drill on contour whenever possible.
- 13. The NMOCD will be notified once successful re-vegetation has been achieved.
- 14. A steel marker will be set at the center of the on-site burial following onsite-pit closure (see application for administrative approval). The marker will be (24" X 24") and will have the operator name, lease name, well number, location (UL, Sec., Twp. and Rge.) and that it designates an "on-site burial location" lettering welded on the top side with a 4" threaded collar welded to the bottom side. The marker will be set at ground level and attached to a 4" diameter pipe that is cemented in a hole three feet deep. When the well is abandoned, a steel riser that is 4" in diameter, extending 4' above the ground will be welded to the pipe anchored in cement below the surface. The riser will have lettering welded on side showing operator name, well number, location (UL, Sec., Twp., and Rge.) and that it designates an on-site burial location.
- 15. Closure Report will be submitted 60-days after re-seeding.
- 16. A deed notice identifying the exact location of the on-site burial will be filed with the County clerk in the county where the on-site burial occurs.

District I 1625 N French Dr., Hobbs, NM 88240

State of New Mexico Energy, Minerals & Natural Resources Department

Form C-102
Revised October 12, 2005
Instructions on back
Submit to Appropriate District Office
State Lease – 4 Copies
Fee Lease – 3 Copies

District II 1301 W. Grand Avenue, Artesia, NM 88210 District III 1000 Rio Brazos Rd., Aztec, NM 87410

OIL CONSERVATION DIVISION 1220 South St. Francis Dr. Santa Fe, NM 87505

District IV 1220 S St Francis Dr., Santa Fe. NM 87505

2625 48

AMENDED REPORT

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Certificate Number

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