225 N. French Dr., Hobbs. NM. 88240 0 REGISTERED 51 00 <u>strict IV</u> 20 S. St. Francis Dr., Santa Fe, NM 87505 <u>Pit, Closed</u> <u>Proposed Alternat</u>	Natural Resources nent on Division Francis Dr. Santa Fe, NM 87505	July 21, 200. For temporary pits, closed-loop sytems, 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 conv to the
STICL IV 20 S. St. Francis Dr., Santa Fe, NM 87505 Pit, Closed Proposed Alternat	on Division Francis Dr. Santa Fe, NM 87505	For permanent pits and exceptions submit to the Santa Fe Environmental Bureau office and provide a conv to the
strict IV 20 S. St. Francis Dr., Santa Fe, NM 87505 <u>Pit, Closed</u> <u>Proposed Alternat</u>	Francis Dr. Santa Fe, NM 87505	For permanent pits and exceptions submit to the Santa Fe Environmental Bureau office and provide a conv to the
00 <u>strict IV</u> 20 S. St. Francis Dr., Santa Fe, NM 87505 <u>Pit, Closed</u> <u>Proposed Alternat</u>	Santa Fe, NM 87505	For permanent pits and exceptions submit to the Santa Fe Environmental Bureau office and provide a conv to the
20 S. St. Francis Dr., Santa Fe, NM 87505 <u>Pit, Closec</u> <u>Proposed Alternat</u>		
Pit, Closec Proposed Alternat		appropriate NMOCD District Office.
Proposed Alternat	d-Loop System, Below-Grad	le Tank, or
	ive Method Permit or Closur	re Plan Application
Type of action: X Permit of a	a pit, closed-loop system, below-grade	tank, or proposed alternative method
Closure of	a pit, closed-loop system, below-grade	e tank, or proposed alternative method
Modificatio	on to an existing permit	
Closure pla	an only submitted for an existing permi	itted or non-permitted pit, closed-loop system,
below-grad	de tank, or proposed alternative method	j
Instructions: Please submit one application (For	rm C-144) per individual pit, closed-lo	op system, below-grade tank or alternative request
Please be advised that approval of this request does no environment. Nor does approval relieve the operator of it	ts responsibility to comply with any other applicable	result in pollution of surface water, ground water or the egovernmental authority's rules, regulations or ordinances.
ddress: BO Box 4290 Examinator NM 87400	any, LP	UGKID#: <u>14558</u>
cility or well name: MODDIS COM 100		
DI Number: 2004520227		ar-
In Invultion         3004329327           /I or Otr/Otry         F         Section: 30 T	OUD remit Numbe	11W Country See Ince
L or Qtr/Qtr: F Section: 28 10	786649N Longitude:	107 000269W NAD: V1027 1083
urface Owner: V Endersl State	Deivete Tribel Trust of India	-107.99920 W NAD. A 1927 1965
Temporary:       Drilling       Workover         Permanent       Emergency       Cavitation       P8         Lined       Unlined       Liner type:       Thic         String-Reinforced       Inter Seams:       Welded       Factory       Other	&A Skness mil LLDPE er Volume: R 11 NIMAC	HDPE         PVC         Other
Type of Operation: P&A Drilling a new y	well Workover or Drilling (Applies to	o 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: Thick	ness mil LLDPEI	HDPE PVD Other
Uther		
<b>Below grade tank:</b> Subsection Lof 19 15 17 11	VMAC	
Volume: 120 bbl Type of	fluid: Produced Water	
Tank Construction material:	Metal	
Secondary containment with leak detection	Visible sidewalls, liner, 6-inch lift and aut	tomatic overflow shut-off
Visible sidewalls and liner Visible sid	iewalls only Other	
Liner Type: Thickness mil	HDPE PVC X Other	Unspecified
Alternative Method:		
Alternative Method:     Submittal of an excention reduest is required. Excention	ns must be submitted to the Santa Fe Enviro	onmental Bureau office for consideration of approval.

· · · · · · · · · · · · · · · · · · ·		
Federing: Subsection D of 19.15.17.11 NMAC (Applies to permanent pit, 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 clu	irch)
Four foot height, four strands of barbed wire evenly spaced between one and four feet		
X Alternate. Please specify 4' hog wire fencing topped with two strands barbed wire.		
	_	
Netting: Subsection E of 19.15.17.11 NMAC (Applies to permanent pits and permanent open top tanks)		
X Screen Netting Other		
Monthly inspections (If netting or screening is not physically feasible)		
Signs: Subsection C of 19.15.17.11 NMAC		
12 X 24 , 2 reterring, providing Operator's name, site location, and emergency telephone numbers		
A Signed in compliance with 19.15.3.103 NMAC		
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:		
X Administrative approval(s): Requests must be submitted to the appropriate division district of the Santa Fe Environmental Bureau office for c (Fencing/BGT Liner)	onsideration of a	pproval.
Exception(s): Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.		
i i i i i i i i i i i i i i i i i i i		
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 accentable		
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. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau Office for consideration of approval. Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance. Siting criteria does not apply to drying pads or above grade-tanks associated with a closed-loop system.		
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. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau Office for consideration of approval. Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance. Siting criteria does not apply to drying pads or 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	XN
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. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau Office for consideration of approval. Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance. Siting criteria does not apply to drying pads or 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         Within 300 feet of a continuously flowing watercourse, or 200 feet of any other watercourse, lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).         • Topographic map; Visual inspection (certification) of the proposed site	□Yes □Yes	XN
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. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau Office for consideration of approval. Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance. Siting criteria does not apply to drying pads or 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 Within 300 feet of a continuously flowing watercourse, or 200 feet of any other watercourse, lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - 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 □Yes □Yes	X N X N
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. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau Office for consideration of approval. Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance. Siting criteria does not apply to drying pads or 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 Within 300 feet of a continuously flowing watercourse, or 200 feet of any other watercourse, lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - 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. (Applies to temporary, emergency, or cavitation pits and below-grade tanks)	□Yes □Yes □Yes □NA	X N X N
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. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau Office for consideration of approval. Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance. Siting criteria does not apply to drying pads or 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         Within 300 feet of a continuously flowing watercourse, or 200 feet of any other watercourse, lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).         • 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.         (Applies to temporary, emergency, or cavitation pits and below-grade tanks)         • Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	□Yes □Yes □Yes □NA	X N X N X N
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. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau Office for consideration of approval. Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance. Siting criteria does not apply to drying pads or 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         Within 300 feet of a continuously flowing watercourse, or 200 feet of any other watercourse, lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).         - 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.         (Applies to temporary, emergency, or cavitation pits and below-grade tanks)         - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	□Yes □Yes □Yes □NA □Yes	▲ ▲ ▲ ▲ ▲
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. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau Office for consideration of approval. Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance. Siting criteria does not apply to drying pads or 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         Within 300 feet of a continuously flowing watercourse, or 200 feet of any other watercourse, lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).         - 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.         (Applies to temporary, emergency, or cavitation pits and below-grade tanks)         - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image         Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.         (Applies to temporary, emergency, or cavitation pits and below-grade tanks) <t< td=""><td>□Yes □Yes □Yes □NA □Yes ▼AA</td><td>X X X X X X</td></t<>	□Yes □Yes □Yes □NA □Yes ▼AA	X X X X X X
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. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau Office for consideration of approval. Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance. Siting criteria does not apply to drying pads or 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         Within 300 feet of a continuously flowing watercourse, or 200 feet of any other watercourse, lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).         • 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.         (Applies to temporary, emergency, or cavitation pits and below-grade tanks)         • Visual inspection (certification) of the proposed site; Aerial photo; Satellite image         Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.         (Applies to temporary, emergency, or cavitation pits and below-grade tanks) <t< td=""><td>Yes Yes Yes NA Yes XNA</td><td>× × × × ×</td></t<>	Yes Yes Yes NA Yes XNA	× × × × ×
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. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau Office for consideration of approval. Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance. Siting criteria does not apply to drying pads or 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         Within 300 feet of a continuously flowing watercourse, or 200 feet of any other watercourse, lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).         • 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.         (Applies to temporary, emergency, or cavitation pits and below-grade tanks)         • Visual inspection (certification) of the proposed site; Aerial photo; Satellite image         Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.         (Applied to permanent residence, school, hospital, institution, or church in existence at the tim	☐Yes ☐Yes ☐Yes ☐NA ☐Yes XNA ☐Yes	
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. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau Office for considered an exception which must be submitted to the Santa Fe Environmental Bureau Office for considered an exception which must be submitted to the Santa Fe Environmental Bureau Office for considered an exception which must be submitted to the Santa Fe Environmental Bureau Office for considered an exception which must be submitted to the Santa Fe Environmental Bureau Office for considered an exception which must be submitted to the Santa Fe Environmental Bureau Office for considered an exception which must be submitted to the Santa Fe Environmental Bureau Office for considered an exception which must be submitted to the Santa Fe Environmental Bureau Office for considered an exception which must be submitted to the Santa Fe Environmental Bureau Office for considered an exception which must be submitted to the Santa Fe Environmental Bureau Office for considered an exception which must be submitted to the Santa Fe Environmental Bureau Office for considered an exception for request. Please refer to 19.15.17.10 NMAC for guidance. Sitting criteria does not apply to drying pads or 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         Within 300 feet of a continuously flowing watercourse, or 200 feet of any other	☐Yes ☐Yes ☐Yes ☐NA ☐Yes XNA ☐Yes	
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. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau Office for consideration of approval. Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance. Siting criteria does not apply to drying pads or 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         Within 300 feet of a continuously flowing watercourse, or 200 feet of any other watercourse, lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).       Topographic may; 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.       (Applies to temporary, emergency, or cavitation pits and below-grade tanks)         Visual inspection (certification) of the proposed site; Aerial photo; Satellite image       Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.         (Applies to temporary, emergency, or cavitation pits and below-grade tanks)       Visual inspection (certification) of the proposed site; Aerial photo; Satellite image <td>☐Yes ☐Yes ☐Yes ☐NA ☐Yes XNA ☐Yes ☐Yes</td> <td></td>	☐Yes ☐Yes ☐Yes ☐NA ☐Yes XNA ☐Yes ☐Yes	
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. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau Office for consideration of approval. Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance. Siting criteria does not apply to drying pads or 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         Within 300 feet of a continuously flowing watercourse, or 200 feet of any other watercourse, lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).         • 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.         (Applies to temporary, emergency, or cavitation pits and below-grade tanks)         • Visual inspection (certification) of the proposed site; Aerial photo; Satellite image         Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.         (Applied to permanent pits)       Visual inspection (certification) of the proposed site	☐Yes ☐Yes ☐Yes ☐NA ☐Yes XNA ☐Yes ☐Yes	× × × × × ×
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. Requests regarding changes to certain siting criteria may require administrative approval from the approprint district office or may be considered an acceptable to the sont or the environmental Bureau Office for consideration of approval. Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance. Siting criteria does not apply to drying pads or 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         Within 300 feet of a continuously flowing watercourse, or 200 feet of any other watercourse, lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).       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.       (Applies to temporary, emergency, or cavitation pits and below-grade tanks)         Visual inspection (certification) of the proposed site; Aerial photo; Satellite image       Within 1000 horizontal feet of any other 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.         (Applied to permanent pits)       Visual inspection (certific	□Yes □Yes □Yes □NA □Yes XNA □Yes □Yes □Yes	× × × × × × × × × × × × × × × × × × ×
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. Requests regarding changes to certain siting criteria may require administrative approval from the approprine district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau Office for consideration of approval. Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance. Siting criteria does not apply to drying pads or 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         Within 300 feet of a continuously flowing watercourse, or 200 feet of any other watercourse, lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).       - 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.       (Applies to temporary, emergency. or cavitation pits and below-grade tanks)         - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image       Within 1000 horizonal feet of a private, domestic fresh water well or spring, in existence at the time of initial application.         (Applied to permanent pits)       - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image         Within 500 horizona	□Yes □Yes □Yes □NA □Yes XNA □Yes □Yes □Yes	X X X X X X X X X X X X X X X X
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. Requests regarding changes to certain siting criteria may require administrative approval from the approprine district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau Office for consideration of approval. Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance. Siting criteria does not apply to drying pads or 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         Within 300 feet of a continuously flowing watercourse, or 200 feet of any other watercourse, lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).         • 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.         (Applies to temporary, emergency, or cavitation pits and below-grade tanks)         • Visual inspection (certification) of the proposed site; Aerial photo; Satellite image         Within 500 horizonal 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 horizonal feet of any other fresh water well or spring, in existence at the time of initial applicat	□Yes □Yes □Yes □NA □Yes XNA □Yes □Yes □Yes	X X X X X X X X X X X X X X X X
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. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau Office for consideration of approval. Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance. Stiing criteria does not apply to drying pads or 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 nearby wells         Within 300 feet of a continuously flowing watercourse, or 200 feet of any other watercourse, lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).         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.         (Applies to temporary, emergency, or cavitation pits and below-grade tanks)         Visual inspection (certification) of the proposed site; Aerial photo; Satellite image         Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.         (Applies to temporary):       Visual inspection (certification) of the proposed site; Aerial photo; Satellite image         Within 1000 feet from a permanent residence, school, hospital, institution, or c	□Yes □Yes □Yes □NA □Yes XNA □Yes □Yes □Yes	X X X X X X X X X X X X X X X X X X X X
Sitting 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. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Sonta F Environmental Bureau Office for consideration of approval. Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance. Siting criteria does not apply to drying pads or 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 - i WATERS database search; USGS: Data obtained from nearby wells         Within 300 feet of a continuously flowing watercourse, or 200 feet of any other watercourse, lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark),       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.       (Applies to temporary, emergency, or cavitation pits and below-grade tanks)         Visual inspection (certification) of the proposed site; Aerial photo; Satellite image       Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.         (Applies to temporary, emergency, or cavitation pits and below-grade tanks)       Visual inspection (certification) of the proposed site; Aerial photo; Satellite image </td <td>□Yes □Yes □Yes □NA □Yes XNA □Yes □Yes □Yes □Yes □Yes</td> <td></td>	□Yes □Yes □Yes □NA □Yes XNA □Yes □Yes □Yes □Yes □Yes	
Siting Criteria (regarding permitting): 19.15.17.10 NMAC         Instructions: The application must demonstrate compliance for each siting criteria below in the application. Recommendations of acceptable source material are provided below. Requests regarding changes to certain siting criteria may require diministrative approval from the appropriate district office or may be considered an exception which must be submitted to the Stant Fe Environmental Bureau Office for consideration of approval. Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance. Siting criteria does not apply to drying pads or 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         Within 300 feet of a continuously flowing watercourse, or 200 feet of any other watercourse, lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).       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.       (Applies to temporary, emergency, or cavitation pits and below-grade tanks)         Visual inspection (certification) of the proposed site; Aerial photo; Satellite image       Within 300 berizonal feet of a ny other fresh water well or spring that less than five households use for domestic or stock watering purpose, or within a defined municipal fresh water well field covered under a municipal outdance adopted pursuant to NMA Office of the State Engineer - iWATERS database search; Visual inspection (certification) of	□Yes □Yes □Yes □NA □Yes ▼NA □Yes □Yes □Yes □Yes □Yes	X X X X X X X X X X X X X X X X X X X X
Sitting Criteria (regarding permitting): 19.15.17.10 NMAC           Instructions: The application must demonstrate compliance for each sting criteria below in the application. Recommendations of acceptable source material are provide below. Requests regarding changes to certain sting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau Office for consideration of approval. Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance. Siting criteria does not apply to drying pade or above grad-clanks 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           Within 300 feet of a continuously flowing watercourse, or 200 feet of any other watercourse, lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).         Topographic may: 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.         (Applies to temporary, emergency, or cavitation pits and below-grade tanks)           Visual inspection (certification) of the proposed site; Aerial photo; Satellite image         Visual inspection (certification) of the proposed site; Aerial photo; Satellite image           Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.           (Applied to permanent)         Visua	<ul> <li>Yes</li> <li>Yes</li> <li>Yes</li> <li>NA</li> <li>Yes</li> <li>XNA</li> <li>Yes</li> <li>XNA</li> <li>Yes</li> <li>Yes</li> <li>Yes</li> <li>Yes</li> <li>Yes</li> <li>Yes</li> <li>Yes</li> <li>Yes</li> <li>Yes</li> </ul>	

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
X 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
X Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19 15 17 10 NMAC
X Design Plan - based upon the appropriate requirements of 19 15 17 11 NMAC
X Operating and Maintenance Plan - based upon the appropriate requirements of 19 15 17 12 NMAC
X Closure Plan (Please complete Boyes 14 through 18 if applicable), based upon the appropriate sequinements of Subscription Code
19.15.17.9 NMAC and 19.15.17.13 NMAC
Previously Approved Design (attach copy of design) API or Permit
12         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
Previously Approved Operating and Maintenance Plan API
13
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 (I) of Subsection B of 19.15.17.9 NMAC
Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
Certified Engineering Design Plans based upon the engraphic sequirements of 10.15.17.11 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 H2S, 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
14 Proposed Closure: 19151713 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 X Below-grade Tank Closed-loop System
Proposed Closure Method: X Waste Excavation and Removal (Below-Grade Tank)
Waste Removal (Closed-loop systems only)
On-site Closure Method (only for temporary pits and closed-loop systems)
In-place Burial On-site Trench
Alternative Closure Method (Exceptions must be submitted to the Santa Fe Environmental Bureau for consideration)
15 <u>Waste Excavation and Removal Closure Plan Checklist:</u> (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.
X Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC
X Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC
X Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings)
X Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
X Re-vegetation Plan - based upon the appropriate requirements of Subsection 1 of 19.15.17.13 NMAC
X Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

`r

16		
Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul- Instructions: Please identify the facility or facilities for the disposal of liquids, drilling fluids and drill cu are required.	<u>aff Bins Only:</u> (19.15.17.13.D NMAC) trings. Use attachment if more than two facilities	
Disposal Facility Name: Disposal Facilit	y Permit #:	
Disposal Facility Name: Disposal Facilit	y Permit #:	
Will any of the proposed closed-loop system operations and associated activities occur on or in a Yes (If yes, please provide the information No	reas that will not be used for future service and ope	erations?
Required for impacted areas which will not be used for future service and operations:     Soil Backfill and Cover Design Specification - based upon the appropriate requirements of Re-vegetation Plan - based upon the appropriate requirements of Subsection 1 of 19.15.1	of Subsection H of 19.15.17.13 NMAC 7.13 NMAC	
Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.1	5.17.13 NMAC	
17 <u>Siting Criteria (Regarding on-site closure methods only:</u> 19.15.17.10 NMAC Instructions: Each siting criteria requires a demonstration of compliance in the closure plan. Recommendations of certain siting criteria may require administrative approval from the appropriate district office or may be considered for consideration of approval. Justifications and/or demonstrations of equivalency are required. Please refer to 19	acceptable source material are provided below. Requests regi I an exception which must be submitted to the Santa Fe Enviro. 15.17.10 NMAC for guidance.	irding changes to unental Bureau office
Ground water is less than 50 feet below the bottom of the buried waste.	Yes	No
<ul> <li>NM Office of the State Engineer - iWATERS database search; USGS: Data obtained from nearby v</li> </ul>	vells N/A	
Ground water is between 50 and 100 feet below the bottom of the buried waste	Yes	No
- NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby w	rells N/A	-
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 w	vells N/A	
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse or (measured from the ordinary high-water mark).	lakebed. sinkhole, or playa lake	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 tim - Visual inspection (certification) of the proposed site; Aerial photo; satellite image	e of initial application.	No
	Yes	No
Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households or purposes, or within 1000 horizontal fee of any other fresh water well or spring, in existence at the time of - NM Office of the State Engineer - iWATERS database: Visual inspection (certification) of the propo	ise for domestic or stock watering the initial application. sed site	
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered un pursuant to NMSA 1978, Section 3-27-3, as amended.	der a municipal ordinance adopted	No
Within 500 feet of a wetland		
- US Fish and Wildlife Wetland Identification map: Topographic map: Visual inspection (certification	i) of the proposed site	
Within the area overlying a subsurface mine.	Yes	No
- Written confirantion 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; U	SGS: NM Geological Society;	No
Topographic map Within a 100-year floodplain		
- FEMA map		
18 On-Site Closure Plan Checklist: (19.15.17.13 NMAC) Instructions: Each of the following i	tems must bee attached to the closure plan. Pleas	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 I	<sup>7</sup> of 19.15.17.13 NMAC	
Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate req	airements of 19.15.17.11 NMAC	
Construction/Design Plan of Temporary Pit (for in place burial of a drying pad) - based up	on the appropriate requirements of 19.15.17.11 NM	IAC
Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMA	L Subsection E of 10.15.17.17 NMAC	
Waste Material Sampling Plan, based upon the appropriate requirements of Sub-	2005CUUILE OF 19.12.17.13 INVIAU	
waste material sampling rian - based upon the appropriate requirements of Subsection P	UL 17.10.17.10 INVIAU	d)
Soil Cover Design - based upon the anoronriate requirements of Subsection H of 10.15.17	1 in case on-she closure standards cannot be achieve	.u)
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 19.1	5.17.13 NMAC	

1

r			
19 Operator Application	Certification:		
I hereby certify that the in	formation submitted with this application is true, accura	ate and complete to	the best of my knowledge and belief.
Name (Print):	Crystal Tafoya	Title:	Regulatory Technician
Signature:	Constal Talano	Date:	12/22/2008
e-mail address:	crystal.taloya@conocophillipa.com	Telephone:	505-326-9837
· ·			
20 OCD Approval:	Permit Application (including closure plan)	Closure Plan (or	aly) OCD Conditions (see attachment)
OCD Representative S	ignature:		Approval Date:
Title:		OCD P	ermit Number:
21 <u>Closure Report (requii</u> Instructions: Operators ar report is required to be su approved closure plan has	red within 60 days of closure completion): Subsect e required to obtain an approved closure plan prior to bmitted to the division within 60 days of the completion to been obtained and the closure activities have been con-	tion K of 19.15.17.13 N implementing any of of the closure acti npleted.	MAC closure activities and submitting the closure report. The closure vities. Please do not complete this section of the form until an sure Completion Date:
Closure Method:     Waste Excavation     If different from ag	and Removal On-site Closure Method opproved plan, please explain.	Alternative Clo	sure Method Waste Removal (Closed-loop systems only)
23 Closure Report Regardin Instructions: Please identive were utilized. Disposal Facility Name Disposal Facility Name Were the closed-loop sy Yes (If yes, please Required for impacted Site Reclamation (	g Waste Removal Closure For Closed-loop Systems     ify the facility or facilities for where the liquids, drillin     ystem operations and associated activities performed or     demonstrate compliane to the items below)     areas which will not be used for future service and oper Photo Documentation)	That Utilize Above ag fluids and drill of Disposal Fac Disposal Fac or in areas that wi No rations:	e Ground Steel Tanks or Haul-off Bins Only: cuttings were disposed. Use attachment if more than two facilities ility Permit Number: ility Permit Number: Il not be used for future service and opeartions?
Soil Backfilling an	d Cover Installation		
Re-vegetation App	lication Rates and Seeding Technique		
24 Closure Report Atta the box, that the docum Proof of Closure Proof of Deed No Plot Plan (for on- Confirmation Sam Waste Material S Disposal Facility Soil Backfilling a Re-vegetation Ap Site Reclamation On-site Closure L	Achment Checklist: Instructions: Each of the follow ments are attached. Notice (surface owner and division) bitce (required for on-site closure) site closures and temporary pits) npling Analytical Results (if applicable) ampling Analytical Results (if applicable) Name and Permit Number nd Cover Installation pplication Rates and Seeding Technique (Photo Documentation) cocation: Latitude:	ving items must be	attached to the closure report. Please indicate, by a check mark inNAD19271983
X			
25 Operator Closure Cert I hereby certify that the inf the closure complies with c	ification: iormation and attachments submitted with this closure r ill applicable closure requirements and conditions spec	eport is ture, accur ified in the approve	ate and complete to the best of my knowledge and belief. I also certify that ed closure plan.
Name (Print):		Title:	
Signature:		Date:	
e-mail address:		Telephone:	

.'

New Mexico Office of the State Engineer

### New Mexico Office of the State Engineer **POD Reports and Downloads**

Township: 30N Range:	11W Sections:	
NAD27 X: Y:	Zone: Search	h Radius:
County: Basin:	Number:	Suffix:
Owner Name: (First)	(Last)	omestic C Domestic C All
POD / Surface Data Report	Avg Depth to Water Report	Water Column Report
Clear F	orm iWATERS Menu Help	

#### WATER COLUMN REPORT 08/21/2008

	(quarters	s are	1=1	W	2=	NE :	3=SW 4=SE	)					
	(quarter	s are	big	gge	st	to	smallest	)		Depth	Depth	Water	(in
POD Number	Tws	Rng	Sec	đ	đ	đ	zone	X	¥	Well	Water	Column	
RG 50669	30N	LIW	27	1	2					.360	310	50	
SJ 02765	30N	TIM	02	1	3					54	20	34	
SJ 00975	30N	TTM	02	1	3					60	20	40	
SJ 01217	3 UN	11W	02	T	3					60	30	30	
SJ 02837	30N	11W	02	3	4	T				150		1.0	
SJ 01437	30N	11W	03	1						40	28	12	
SJ 03121	30N	11W	03	1	2	4				36	12	24	
SJ 02049	30N	11W	03	1	3					26	8	18	
SJ 01339	30N	11W	03	1	3	1				40	15	25	
SJ 02814	30N	11W	03	1	3	2				31	8	23	
SJ 00350	30N	11W	03	1	3	2				46	12	34	
SJ 01441	30N	11W	03	1	3	2				48	20	28	
SJ 02835	30N	11W	03	1	3	2				26	8	18	
SJ 01387	30N	11W	03	1	4					40	18	22	
SJ 03698 POD1	30N	11W	03	1	4	1				40	5	35	
SJ 02785	30N	11W	03	1	4	2				31	5	26	
SJ 01313	30N	11W	03	2						70	5.8	12	
SJ 01805	30N	11W	03	2						35	20	15	
SJ 01807	30N	11W	03	2	1					50	30	20	
SJ 01202	30N	11W	03	2	1	2				3.5	8	27	
SJ 02781	30N	11W	03	2	1	2				48	23	25	
SJ 03758 POD1	30N	11W	03	2	1	2	268	158	2127473	49	21	28	
SJ 03765 POD1	30N	11W	03	2	1	2	268	163	2127605	43	20	23	
SJ 03756 POD1	30N	11W	03	2	1	2	268	179	2127870	41	20	21	
SJ 02786	30N	11W	03	2	3	1				51	24	27	
SJ 01901	30N	11W	03	2	3	2				60	26	34	
SJ 00698	30N	11W	03	2	3	3				44	14	30	
SJ 01261	30N	11W	03	2	3	4					20		
SJ 02930	30N	11W	03	2	4	4				81	64	17	
SJ 02798	30N	11W	03	2	4	4				80	61	19	
SJ 00402	30N	11W	03	3						32	18	14	
SJ 01734	30N	11W	03	3	2					33	5	28	

SJ 00762	30N	11W 03	32				47	22	25
SJ 01440	30N	11W 03	3 2 3				41	21	2.0
SJ 01020	30N	11W 03	3 3				27	5	22
S.T. 03242	3.0N	11W 03	<b>२</b> २ 1				23	9	1 /
SJ 03732 POD1	3 ON	11107 03	3 3 1				30	9	20
ST 03732 FODI	2011	1110 03	2 2 2 2				20	10	29
50 03239	2 ON	11W 03	2 2 2 2				33	12	21
SJ 01238	2010	11W 03	41				95	38	57
SJ 02245	30N	IIW 03	4 1 3				66	30	36
SJ 01043	30N	11W 03	414				50		
SJ 01249	30N	11W 03	4 2				52	22	30
SJ 02563	30N	11W 03	421				96	60	36
SJ 02824	30N	11W 03	4 2 1				70	50	20
SJ 03153	30N	11W 03	4 2 1				80	60	20
SJ 03454	30N	11W 03	424				100		
SJ 03291	30N	11W 03	4 3 2				38 .	18	2.0
SJ 00366	30N	11W 03	4 4 4				33	18	15
ST 01364	30N	111 04	2				115	86	29
ST 03076	3 ON	1110 04	2 2 3				11	1.0	2.1
50 03070	2011		2 2 3				44	10	24
SJ 02903	2 ON	11W 04					49	31	18
SJ 03039	301	11W 04	412				53	40	13
SJ 01450	30N	11W 04	4 3				45	20	25
SJ 02941	30N	11W 04	432				58	37	21
SJ 01367	30N	11W 04	4 4 1				48	20	28
SJ 03407	30N	11W 04	444	W	453700	2124100	30	5	25
SJ 03267	30N	11W 05	2 1 3				83	60	23
SJ 03245	30N	11W 06	444				80	65	15
SJ 02194	30N	11W 07					59	22	37
SJ 02140	30N	11W 07	1 1 1				70	60	10
SJ 00689	30N	11W 07	1 4 3				78	65	13
ST 00690	3 ON	11107 07	1 / 3				60	0.5	10
30 00090	2011	1100 07	1 4 2				60	FO	1.0
50 00002	2 ON	11W 07	1 4 3				60	50	10
53 00889	2011	11W 07	143				20	2.0	1.0
SJ 00806	30N	11W 07	143				38	20	18
SJ 00739	30N	11W 07	143				70	58	12
SJ 00389	30N	11W 07	143				53		
SJ 00688	30N	11W 07	143				70	58	12
SJ 00358	30N	11W 07	143				61	38	23
SJ 00397	30N	11W 07	1 4 3				56	35	21
SJ 00415	30N	11W 07	143				53	40	13
SJ 00387	30N	11W 07	1 4 3						
SJ 00748	30N	11W 07	1 4 3				60	41	19
SJ 03271	30N	11W 07	232						
SJ 01475	30N	11W 07	2 3 3				49	27	22
SJ 03465	30N	11W 07	234				80		
SJ 00259	30N	11W 07	2 4				25	12	13
SJ 01492	30N	11W 07	3				60	22	38
S.T 03794 POD1	30N	1100 07	313		266272	2119520	44	27	17
ST 01172	3 0 N	11W 07	3 2		2002.2	0110000	50	30	20
SD 01172	2 0 1	11107 07	2 2				80	50	30
55 01510	2011	11W 07	2 2				61	10	50
SJ U1484	2 OT	11W 07	2 2 2 2				0T	TO	LC
SJ 03630	3 UN	TIM 07	5 5 5				68	24	44
SJ 01425	30N	11W 07	34				55	25	30
SJ 01468	30N	11W 07	34				60	25	35
SJ 02006	30N	11W 07	3 4 2				50	24	26
SJ 03484	30N	11W 07	3 4 3				75		
SJ 02005	30N	11W 07	3 4 4				55	20	35
SJ 02715	30N	11W 07	3 4 4				68	20	48
SJ 00135	30N	11W 07	4 1				180	23	157
SJ 00769	30N	11W 07	4 1				50	14	36

SJ	01406	30N	11W	07	4	1		45	12
SJ	02936	30N	11W	07	4	1	1	38	30
SJ	00679	30N	11W	07	4	1	3	48	22
SJ	00620	30N	11W	07	4	1	3	52	35
SJ	00329	30N	11W	07	4	1	3	63	20
SJ	00162	30N	11W	07	4	1	3	58	23
SJ	02906	30N	11W	07	4	1	4	45	24
SJ	00893	30N	11W	07	4	2		80	40
SJ	01667	30N	11W	07	4	3		41	21
S.T	01404	30N	11W	07	4	3		40	15
S.T	00919	30N	11W	07	4	3	2	35	12
C.T	00604	30N	11W	07	4	3	2	38	22
C.T	00601	3 ON	11W	07	4	3	2	40	22
S.T	00918	3 ON	111	07	4	3	2	35	14
S.T	00920	30N	11107	07	4	3	2	35	12
C.T	01567	3 ON	1 1 107	07	4	4	2	35	14
SU C.T	00183	3 ON	11107	0.8	1	1	2	360	300
SU CT	03154	3 ON	1111	08	1	1	4	40	000
CT.	03431	3 ON	1 1 107	08	1	Δ	-	50	
SU C.T	00332	30N	111	08	2	2		52	34
SU CT	01451	30N	111	00	2	2		64	34
<u>50</u> 0 T	01059	30N	1 1 1 1	08	2	2		40	25
SU CT	01900	3 ON	11107	00	2	2		61	45
<u>30</u>	01933	3 ON	1 1 107	08	2	2		52	10
0.1	03309	3 ON	1 1 107	08	2	2	1	80	20
0.1	03210	3 ON	1 1 107	08	2	2	2	60	30
C.T	03098	3 ON	11W	08	2	2	2	63	23
C.T	03381	30N	111	0.8	2	2	2	50	
<u>с.т</u>	03240	3 ON	1110	08	2	2	2	50	
C.T	00220	3 ON	11W	08	2	2	3	60	36
C.T	03639	30N	1 1 1 1	08	2	2	4	60	24
<u>с.</u> т	01115	3 ON	11W	08	2	2	4	35	26
50 5.T	03653	30N	11W	08	2	2	4	62	26
SJ	03646	30N	11W	08	2	2	4	61	24
SJ	00228	30N	11W	80	2	2	4	67	38
SJ	03202	30N	11W	80	2	4	2	45	
SJ	03030	30N	11W	08	2	4	2	56	40
SJ	03305	30N	11W	80	2	4	2	50	
SJ	03378	30N	11W	80	2	4	2	50	
SJ	02331	30N	11W	0.8	2	4	2	53	35
SJ	03303	30N	11W	80	2	4	2	55	30
SJ	02293	30N	11W	80	2	4	2	50	35
SJ	00249	30N	11W	0.8	2	4	2	46	30
SJ	01368	30N	11W	80	3	2		59	39
SJ	03089	30N	11W	80	3	2	4	48	36
SJ	03480	30N	11W	80	3	2	4	50	
SJ	03199	30N	11W	80	3	4	1	40	20
SJ	02413	30N	11W	80	3	4	1	40	31
SJ	02915	30N	11W	80	3	4	1	45	_
SJ	03367	30N	11W	80	3	4	4	29	5
SJ	01570	30N	11W	80	4	1		59	37
SJ	00925	30N	11W	80	4	1	2	32	20
SJ	03642	30N	11W	80	4	1	2	58	32
SJ	01520	30N	11W	80	4	1	2	58	18
SJ	03313	30N	11W	80	4	1	4	58	20
SJ	02485	30N	11W	80	4	1	4	49	30
SJ	02261	30N	11W	80	4	3	2		
SJ	03419	30N	11W	80	4	4	2	41	9
SJ	02241	30N	11W	09	1			39	27

SJ 01560	30N	11W 09	1 1
SJ 01585	30N	11W 09	1 1
SJ 03499	30N	11W 09	1 1 1
SJ 02236	30N	11W 09	1 1 1
SJ 03304	30N	11W 09	1 1 2
SJ 03209	30N	11W 09	1 1 3
S.T. 03726 POD1	3.0M	11100 09	1 1 3
ST 03342	3.011	11W 00	1 1 2
ST 02225	2.01	11W 09	
SU 03225	2.01	11W 09	
50 03229	2.011	11W 09	1 1 4
SJ 00924	30N	11W 09	122
SJ 00438	30N	11W 09	1 2 3
SJ 01169	30N	11W 09	1 3
SJ 01574	30N	11W 09	1 3
SJ 02237	30N	11W 09	1 3 1
SJ 03019	30N	11W 09	1 3 1
SJ 02493	30N	11W 09	1 3 1
SJ 03724 POD1	30N	11W 09	1 3 1
SJ 03031	30N	11W 09	1 3 1
SJ 01465	30N	11W 09	1 3 2
SJ 02336	30N	11W 09	1 3 2
SJ 03482	30N	11W 09	1 3 2
SJ 03423	30N	11W 09	1 3 3
ST 00750	30N	1110 09	1 /
ST 02975	3 ON	111 09	2 1 /
ST 03269	2011	1110 09	2 2 2 2
ST 00364	2011	11W 09	222
CT 02120	SON	11W 09	2 2 2
SJ 03126	201	11W 09	232
SJ 00364 CLW263561	2 ON	11W 09	232
\$3 01955	30N	11W 09	2 4
SJ 02528	30N	11W 09	24
SJ 02290	30N	11W 09	242
SJ 00347	30N	LIW 09	4
SJ 01436	30N	11W 09	4 1
SJ 03471	30N	11W 09	4 1 1
SJ 03223	30N	11W 09	4 2 2
SJ 03263	30N	11W 09	4 2 2
SJ 03374	30N	11W 09	4 3 1
SJ 02796	30N	11W 09	4 3 2
SJ 03214	30N	11W 09	4 4 2
SJ 03213	30N	11W 09	4 4 2
SJ 02176	30N	11W 10	1 3
SJ 03356	30N	11W 10	1 3 1
SJ 03258	30N	11W 10	1 3 3
SJ 03444	30N	11W 10	1 3 3
SJ 03248	30N	11W 10	1 3 3
SJ 03354	30N	11W 10	1 3 3
SJ 00348	30N	11W 10	1 3 4
SJ 03032	30N	11W 10	1 4 1
SJ 02819	30N	11W 10	2 3 3
SJ 03282	30N	11W 10	2 3 4
SJ 03281	30N	11W 10	2 3 4
SJ 03572	30N	11W 10	3 1 2
SJ 03218	30N	11w 10	3 3 3
SJ 01720	3 ON	111 17	
ST 03745 POD1	3 ON	1111 12	1 1 2
GT 01693	3 ON	1111 12	1 2
GT 01672	3 0 10	1111 13	1 2
GT 01204	2 ONI	11107 10	1 2 2
00 VI274	A LUN	11/1/13	

36 40 53 35 55 49 47 50 50	26 28 12 17 30 32 30 31	10 12 41 18 25 17 17 17
50 46 29 56 46 48 50 49 47 55 47	16 19 33 27 28 30 26 36 35	30 10 23 19 20 20 23 11 20
46	11	35
50 50 26 37 61 50	20 6 12 10 20	30 20 25 51 30
50 33 40 60 45 36 210 20 59 63 44	11 28 15 19 50 5 25 35 29	22 29 32 30 17 160 15 34 28 15
93	63	30
57 55 55	37 30 10	2.0 2.5 4.5
90 80 72 80 140 70 62	30 30 24 30 40 30 32	60 50 48 50 100 40 30
70 50 225 325 225 180 92	30 90 150 89 80 52	20 135 175 136 100 40

http://iwaters.ose.state.nm.us: 7001/iWATERS/WellAndSurfaceDispatcher

.

.

SJ 02773	30N	11W 16	1 1	3			46	25	21
SJ 00410	30N	11W 16	1 2				61	45	16
SJ 03010	30N	11W 16	1 3	1			80	40	40
SJ 03257	30N	11W 16	1 3	3			80	40	40
SJ 02923	30N	11W 16	1 3	3			75	40	35
SJ 03265	30N	11W 16	13	3			90	70	20
SJ 03310	30N	11W 16	1 3	3			55	20	35
SJ 01082	30N	11W 16	22	1			80	34	46
SJ 01722	30N	11W 17	1				20	8	12
SJ 01528	30N	11W 17	1 1				26	10	16
SJ 03373	30N	11W 17	1 1	3			50	35	15
SJ 01948	30N	11W 17	1 2				21	3	18
SJ 02817	30N	11W 17	1 2	2			15		
SJ 01722 POD2	30N	11W 17	1 2	4	266967	2116417	17	3	14
SJ 01899	30N	11W 17	1 3	2			27	7	20
SJ 03771 POD1	30N	11W 17	13	3	266811	211517	20	6	14
SJ 03750 POD1	JUN	11W 17	1 3	3	266811	211517	20	6	1.4
SJ 03319	30N	IIW I/	13	4			55	31	24
SJ 03266	30N	11W 17	14	3			30	10	20
SJ 03436	30N	11W 17	1 4	3			20	2.0	2.4
SJ 00745	2 ON	11W 17	2 1				24	30	24
SJ 00665	2 ON	11W 17		1			28	14	14
SJ 01342	2 ON	$\perp \perp W \perp 7$	2 1	1			20	2 1 1	21
53 00166	2 ON	$\perp \perp W \perp 7$	2 2				40	11	37
SJ 01057	SON	11107 17	2 3				59	20	35
ST 02241	3 ON	1100 17	2 3	3			75	20	55
SU 03241	3 ON	11107 17	23	1			80	10	70
SU 03209	3 ON	111 17	2 1	-1			50	20	20
SU 01200	3 ON	11W 17	2 4	2			68	38	30
ST 00159	3 ON	1111 17	3 1	2			35	8	27
ST 03276	3 ON	11W 17	3 1	4			60	20	40
ST 01296	30N	11W 17	3 2	-			50	10	40
SJ 03249	30N	11W 17	3 2	2			55	12	43
SJ 01810	30N	11W 17	3 4				29	9	20
SJ 00411	30N	11W 17	4 1				60	25	35
SJ 00234	30N	11W 17	4 1				54	23	31
SJ 01847	30N	11W 17	4 1				30	6	24
SJ 00457	30N	11W 17	4 1	2			52	18	34
SJ 00650	30N	11W 17	4 1	3			49	18	31
SJ 02018	30N	11W 17	4 2				100	40	60
SJ 00136	30N	11W 17	4 2				69	35	34
SJ 03718 POD1	30N	11W 17	42	2			68	41	27
SJ 03261	30N	11W 17	4 2	2			88	50	38
SJ 03215	30N	11W 18	1 1	3			52	9	43
SJ 01316	30N	11W 18	1 1	3			46	12	34
SJ 03152	30N	11W 18	1 1	3			52	22	30
SJ 02805	30N	11W 18	1 2	1			60	2.0	5.0
SJ 03463	30N	11W 18	12	1			70	20	50
SJ 02996	30N	11W 18	1 2	1			50.	25	25
SJ 00932	JUN	11W 18	1 2	4			52	15	1/
SJ 01738	JUN	11W 18	1 3				33	6	21
SJ 01733	JUN	11W 18	1 3				29	9	20
SJ 01786	JUN	11W 18	1 3				55	10	20
SJ 01401	JUN	11W 18	1 3	1			44	14	34
SJ 03526	JUN	11W 18	1 3	1			40	20	20
SJ 03176	JUN	11W 18	1 4	1			40	20	20 20
SJ 031/7	JUN	11W 18	1 4	2			57	CL	44
SJ 03344	30N	TIM I8	⊥ 4	6			T00	8	92

SJ 03801 POD1	30N	11W	18	2	2		
SJ 03800 POD1	30N	11W	18	2	2		
SJ 01639	30N	11W	18	2	2	2	
SJ 02098	30N	11W	18	2	4		
SJ 02109	30N	11W	18	2	4		
SJ 02123	30N	11W	18	2	4		
SJ 03290	30N	11W	18	2	4	4	
SJ 02045	30N	11W	18	4			
SJ 03322	30N	11W	18	4	4	1	
SJ 03320	30N	11W	18	4	4	3	
SJ 03321	30N	11W	18	4	4	3	
SJ 02193	30N	11W	19				
SJ 03403	30N	11W	19	1	2	2	
SJ 00638	30N	11W	19	2	1		
SJ 01073	30N	11W	19	2	1		
SJ 03615	30N	11W	19	2	1	1	
SJ 03434	30N	11W	19	2	1	4	
SJ 03088	30N	11W	19	2	1	4	
SJ 01636	30N	11W	19	2	2		
SJ 02862	30N	11W	19	2	2	3	
SJ 00284	30N	11W	19	2	4		
SJ 03645	30N	11W	19	3	1	1	
SJ 03533	30N	11W	19	3	1	3	
SJ 01621	30N	11W	19	3	2		
SJ 02692	30N	11W	19	3	2	2	
SJ 02968	30N	11W	19	3	2	2	
SJ 02812	30N	11W	19	3	2	2	
SJ 01123	30N	11W	19	4	1		
SJ 03437	30N	11W	19	4	1	2	
SJ 03315	30N	11W	19	4	1	2	
SJ 00284 CLW222415	30N	11W	19	4	4		
SJ 03224	30N	11W	30	1	2	4	
SJ 03077	30N	11W	30	2	1	1	
SJ 03668	30N	11W	30	2	1	2	
SJ 03251	30N	11W	32	3	4	4	

266702	2116449	21	6	15
266718	2116651	21	6	15
		40	18	22
		21	7	14
		19	4	15
		22	8	14
		40	10	30
		480	200	280
		40	10	30
		80		
		80		
			105	
		400		
		130	70	60
		100	38	62
		105	35	70
		140		
		120	8.0	40
		70	25	45
		20		
		200	3.5	165
		60	20	40
		20		
		40	38	2
		52	12	40
		75	5	70
		50		
		40	15	25
		30		
		60	54	6
		200	35	165
		80	30	50
		75	70	5
		380	280	100
		150	77	73

Record Count: 303



#### AERIAL MAP **MORRIS COM 100**



DATE: 614 #100= 30-045- 29327 DATA SHEET FOR DEEP GROUND BED CATHODIC. PROTECTION WELLS NORTHWESTERN NEW MEXICO Operator Meridian Oil INC. Location: Unit F Sec. 28 Twp 30 Rag 11 Name of Well/Wells.or Pipeline Serviced\_ Morris Com # 100 Elevation \_\_\_\_ Completion Date 6/4/96 Total Depth 377 Land Type P Casing Strings; Sizes, Types & Depths 6/3 Set 60 of 8 NO GAS, WATER, OF Roulders Were ENCOUNTERED DURING If Casing Strings are cemented, show amounts & types used <u>CemenTec</u> 15 SACKS. If Cement or Bentonite Plugs have been placed, show depths & amounts used NOVE Depths & thickness of water zones with description of water: Fresh, Clear, Salty, Sulphur, Etc. Hit Fresh WATER AT 340 Depths gas encountered: NONC Ground bed depth with type & amount of coke breeze used: ACKS OF ASBULY 218R (H250# Used 85 Depths anodes placed: 290, 280, 270, 260, 250, 240, 230, 220, 210, 200, 190, 180, 1 Depths vent pipes placed: ourtace to 3 Vent pipe perforations: Remarks: and the stand of the second of the second standard standard standard standards and the standards and If any of the above data is unavailable, please indicate a Copies of al logs, including Drillers Log, Water Analyses & Well Bore Schematics should be submitted when available. Unplugged abandoned wells are to be included. Land Type may be shown: F-Federal; I-Indian; S-State; P-Fee. If Federal or Indian, add Lease Number.

n station i de

# Mines, Mills and Quarries Web Map

## **MORRIS COM 100**

Unit Letter: F, Section: 28, Town: 030N, Range: 011W







### **MORRIS COM 100**

#### Site Specific Hydrogeology

A visual site inspection confirming the information contained herein was performed on the well 'MORRIS COM 100', which is located at 36.78564 degree, North latitude and 107.99926 degree, West longitude. This location is located on the Aztec 7.5' USGS topographic quadrangle. This location is in section 28 of Township 30 North Range 11 West of the Public Land Survey System (New Mexico Principal Meridian). This location is located in San Juan County, New Mexico. The nearest town is Aztec, located 2.5 miles to the north. The nearest large town (population greater than 10,000) is Farmington, located 12.0 miles to the west (National Atlas). The nearest highway is US Highway 550, located 0.9 miles to the east. The location is on BLM land and is 616 feet from the edge of the parcel as notated in the BLM land status layer updated January 2008. This location is in the Animas. Colorado, New Mexico, Sub-basin. This location is located 1796 meters or 5890 feet above sea level and receives 11 inches of rain each year. The vegetation at this location is classified as Colorado Plateau Pinon-Juniper Woodland as per the Southwest Regional Gap Analysis Program.

The estimated depth to ground water at this point is 340 feet. This estimation is based on the data published on the New Mexico Engineer's iWaters Database website and water depth data from ConocoPhillips' Cathodic wells. Groundwater data available from the NM State Engineer's iWaters Database for wells near the proposed site are attached. The nearest stream is 20 feet to the northeast and is classified by the USGS as an intermittent stream. The nearest perennial stream is 3,725 feet to the north. The nearest water body is 3,721 feet to the north. It is classified by the USGS as an intermittent lake and is 0.3 acres in size. The nearest spring is 29,838 feet to the southeast. All stream, river, water body and spring information was determined as per the USGS Hydrographic Dataset (High Resolution), downloaded 3/2008. The nearest water well is 3,220 feet to the northwest. The nearest wetland is a 0.4 acre Freshwater Pond located 8.636 feet to the northwest. The slope at this location is 0 degree, to the west as calculated from USGS 30M National Elevation Dataset. This information is also discerned from the aerial and topographic map included. The surface geology at this location is NACIMIENTO FORMATION--Shale and sandstone with a Shale dominated formations of all ages substrate. The soil at this location is 'Gypsiorthids-Badland-Stumble complex, moderately steep' and is somewhat excessively drained and not hydric with severe erosion potential as taken from the NRCS SSURGO map unit, downloaded January 2008. The nearest underground mine is 13.6 miles to the northeast as indicated on the Mines, Mills and Quarries Map of New Mexico provided.

**Regional Geological context:** 

The Nacimiento Formation is of Paleocene age (Baltz, 1967, p. 35). It crops out in a broad band inside the southern and western margins of the central basin and in a narrow band along the west face of the Nacimiento Uplift. The Nacimiento is a nonresistant unit and typically erodes to low, rounded hills or forms badland topography.

The Nacimiento Formation occurs in approximately only the southern two-thirds of the San Juan Basin where it conformably overlies and intertongues with the Ojo Alamo Sandstone (Fassett, 1974, p. 229). The Nacimiento Formation grades laterally into the main part of the Animas Formation (Fassett and Hinds, 1971, p. 34); thus, in this area, the two formations occupy the same stratigraphic interval.

Strata of the Nacimiento Formation were deposited in lakebeds in the central basin area with lesser deposition in stream channels (Brimhall, 1973, p. 201). In general, the Nacimiento consists of drab, interbedded black and gray shale with discontinuous, white, medium- to very coarse grained arkosic sandstone (Stone e al., 1983, p.30). Stone et al. indicated that the formation may contain more sandstone than commonly reported because some investigators assume the slope-forming strata in the unit area shales, whereas in many places the strata actually are poorly consolidated sandstones.

Total thickness of the Nacimiento Formation ranges from about 500 to 1,300 feet. The unit generally thickens from the basin margins toward the basin center (Steven et al., 1974). The sandstone deposits within the Nacimiento Formation are much thinner than the total thickness of the formation because their environment of deposition was localized stream channels (Brimhall, 1973, p. 201). The thickness of the combined San Jose, Animas, and Nacimiento Formations ranges from 500 to more than 3.500 feet.

#### Hydraulic Properties:

Reported well yields for 53 wells completed in either the Animas or Nacimiento Formations range from 2 to 90 gallons per minute and the median yield is 7.5 gallons per minute. The primary use of water from Nacimiento and Animas Formations is domestic and livestock supplies. There are no known aquifer tests for the Animas or Nacimiento Formations, but specific capacities reported for six wells range from 0.24 to 2.30 gallons per minute per foot of drawdown (Levings et al., 1990).

The Animas and Nacimiento Formations are in many ways hydrologically similar to the San Jose Formation because sands in both units produce approximately the same quantities of water. However, the greater percentage of fine materials in the Animas and Nacimiento Formations may restrict downward vertical leakage to the Ojo Alamo Sandstone or Kirtland Shale. The poorly cemented fine material is highly erodible, forms a badland terrain, and supports only spotty vegetation. These conditions are more conductive to runoff than retention of precipitation.

#### **References:**

Baltz, E.H., 1967, Stratigraphy and regional tectonic implications of part of Upper Cretaceous rocks, eastcentral San Juan Basin, New Mexico: USGS Professional Paper 552, 101 p.

Brimhall, R.M., 1973, Ground-water hydrology of Tertiary rocks of the San Juan Basin, New Mexico, in Fassett, J.E., ed., Cretaceous and Tertiary rocks of the Southern Colorado Plateau: Four Corners Geological Society Memoir, p. 197-207.

Fassett, J.E., 1974, Cretaceous and Tertiary rocks of the eastern San Juan Basin, New Mexico and Colorado, in Guidebook of Ghost Ranch, central-northern New Mexico: New Mexico Geological Society, 25th Field Conference, p. 225-230.

Fassett, J.E., and Hinds, J.S., 1971, Geology and fuel resources of the Fruitland Formation and Kirtland Shale of the San Juan Basin, New Mexico and Colorado: USGS Professional Paper 676, 76 p.

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: USGS Hydrologic Investigations Atlas HA-720-A, 2 sheets.

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.

## Burlington Resources Oil & Gas Company, LP San Juan Basin Below Grade Tank Design and Construction

In accordance with NMAC 19.15.17 the following information describes the design and construction of below grade tanks on Burlington Resources Oil & Gas Company, LP (BR) locations. This is BR's standard procedure for all below grade tanks (BGT). A separate plan will be submitted for any BGT which does not conform to this plan.

#### General Plan:

- 1. BR will design and construct a properly sized and approved BGT which will contain liquids and should prevent contamination of fresh water to protect the public health and environment.
- 2. BR signage will comply with 19.15.3.103 NMAC when BR is the operator. If BR is not the operator it will comply with 19.15.17.11NMAC. BR includes Emergency Contact information on all signage.
- 3. BR has approval to use alternative fencing that provides better protection. BR constructs fencing around the BGT using 4 foot hog wire fencing topped with two strands of barbed wire, or with a pipe top rail. A six foot chain link fence topped with three strands of barbed wire will be use if the well location is within 1000 feet of permanent residence, school, hospital, institution or church. BR ensures that all gates associated with the fence are closed and locked when responsible personnel are not onsite.
- 4. BR will construct a screened, expanded metal covering, on the top of the BGT.
- 5. BR shall ensure that a below-grade tank is constructed of materials resistant to the below-grade tank's particular contents and resistant to damage from sunlight as shown on design drawing and specification sheet.
- 6. The BR below-grade tank system shall have a properly constructed foundation consisting of a level base free of rocks, debris, sharp edges or irregularities to prevent punctures, cracks or indentations of the liner or tank bottom as shown on design drawing.
- 7. BR shall operate and install the below-grade tank to prevent the collection of surface water run-on. BR has built in shut off devices that do not allow a below-grade tank to overflow. BR constructs berms and corrugated retaining walls at least 6" above ground to keep from surface water run-on entering the below grade tank as shown on the design plan.
- 8. BR will construct and use a below-grade tank that does not have double walls. The below-grade tank's side walls will be open for visual inspection for leaks, the below-grade tank's bottom is elevated a minimum of six inches above the underlying ground surface and the below-grade tank is underlain with a geomembrane liner to divert leaked liquid to a location that can be visually inspected.

- 9. BR has equipped the below-grade tanks with the ability to detect high level in the tank and provide alarm notification and shutdown process streams into the tank. Once high level is detected RTU logic closes the inlet separator sales valve and does not permit vent valve to open. This shutdown of the sales valve and gagging of the vent valves prevents any hydrocarbon process streams from entering the pit tank once a high level is detected. Furthermore, an electronic page is sent to the BR MSO for that well site and to the designated contract "Water-Hauling" Company indicating a high level and that action must be taken to address this alarm. The environmental drain line from BR's compressor skid under normal operating conditions is in the open position. The environmental drain line is in place to capture any collected rain water or spilled lubricants from our compressor skids. The swab drain line is a manually operated drain and by normal operating procedures is in the closed position. The tank drain line is also a manually operated drain and during normal operations it is in the closed position.
- 10. The geomembrane liner consists of a 45-mil flexible LLDPE material manufactured by Raven Industries as J45BB. This product is a four layer reinforced laminated containing no adhesives. The outer layers consist of a high strength polyethylene film manufactured using virgin grade resins and stabilizers for UV resistance in exposed applications. The J45BB is reinforced with 1300 denier (minimum) tri-directional scrim reinforcement. It exceeds ASTMD3083 standard by 10%. J45BB has a warranty for 20 years from Raven Industries and is attached. It is typically used in Brine Pond, Oilfield Pit liner and other industrial applications. The manufacture specific sheet is attached and the design attached displays the proper installation of the liner.
- 11. The general specification for design and construction are attached in the BR document.



PROPERTIES	TEST METHOD	थे। जी राज्य स्वर्थना के स्वर्थना क	130BB		6DE	2011日期,但期日1日	
	len - in electric Bardo d'alta ana transforma a lan ing	Min. Roll Averages	Typical Roll Averages	Min. Roll Averages	Typical Roll	Min. Roll	555 Typical Roll
Appearance		Black/Black		Black/Black		Black/Black	
Thickness	ASTM D 5199	27 mil	30 mil	32 mil	36 mil	40 mil	
Weight Lbs Per MSF (oz/yd²)	ASTM D 5261	126 lbs (18.14)	140 lbs (20.16)	151 lbs (21.74)	168 lbs (24,19)	189 lbs (27.21)	210 lbs (20.24)
Construction		**Extrusion laminated with encapsulated tri directional and					
Ply Adhesion	ASTM D 413	16 lbs	20 lbs	19 lbs	24 lbs	25 lbs	31 lbs
1* Tensile Strength	ASTM D 7003	88 lbf MD 63 lbf DD	110 lbf MD 79 lbf DD	90 lbf MD 70 lbf DD	113 lbf MD 87 lbf DD	110 lbf MD 84 lbf DD	138 lbf MD 105 lbf DD
1" Tensile Elongation @ Break. % (Film Break)	ASTM D 7003	550 MD 550 DD	750 MD 750 DD	550 MD 550 DD	750 MD 750 DD	550 MD 550 DD	750 MD 750 DD
1" Tensile Elongation @ Peak % (Scrim Break)	ASTM D 7003	20 MD 20 DD	33 MD 33 DD	20 MD 20 DD	30 MD 31DD	20 MD 20 DD	36 MD 36 DD
Tongue Tear Strength	ASTM D 5884	75 lbf MD 75 lbf DD	97 lbf MD 90 lbf DD	75 lbf MD 75 lbf DD	104 lbf MD 92 lbf DD	100 lbf MD 100 lbf DD	117 lbf MD 118 lbf DD
Grab Tensile	ASTM D 7004	180 lbf MD 180 lbf DD	218 lbf MD 210 lbf DD	180 lbf MD 180 lbf DD	222 lbf MD 223 lbf DD	220 lbf MD 220 lbf DD	257 lbf MD 258 lbf DD
Trapezoid Tear	ASTM D 4533	120 lbf MD 120 lbf DD	146 lbf MD 141 lbf DD	130 lbf MD 130 lbf DD	189 lbf MD 172 lbf DD	160 lbf MD 160 lbf DD	193 lbf MD 191 lbf DD
* Dimensional Stability	ASTM D 1204	<1	<0.5	<1	<0.5	<1	<0.5
Puncture Resistance	ASTM D 4833	50 lbf	64 lbf	65 lbf	83 lbf	80 lbf	
Maximum Use Temperature		180° F	180° F	180° F	180° F	180° E	190% 5
Minimum Use Temperature		-70° E	70% 5			100 F	IOU F

...

MD = Machine Direction

DD = Diagonal Directions

Note: Minimum Roll Averages are set to take into account product variability in addition to testing variability between laboratories.

-70° F

-70° F

\*Dimensional Stability Maximum Value

-70° F

\*\*DURA-SKRIM J30BB, J36BB & J45BB are a four layer reinforced laminate containing no adhesives. The outer layers consist of a high strength polyethylene film manufactured using virgin grade resins and stabilizers for UV resistance in exposed applications. DURA-SKRIM J30BB, J36BB & J45BB are reinforced with a 1300 denier (minimum) tri-directional scrim reinforcement.

Note: RAVEN INDUSTRIES MAKES NO WARRANTIES AS TO THE FITNESS FOR A SPECIFIC USE OR MERCHANTABILITY OF PRODUCTS REFERRED TO, no guarantee of satisfactory results from reliance upon contained information or recommendations and disclaims all liability for resulting loss or damage.



## PLANT LOCATION

-70° F

Sioux Falls, South Dakota

## SALES OFFICE

-70° F

-70° F

KINC

P.O. Box 5107 Sioux Falls, SD 57117-5107 (605) 335-0174 (605) 331-0333 FAX 800-635-3456

## RAVEN INDUSTRIES INC. EXPOSED GEOMEMBRANE LIMITED WARRANTY

Raven Industries Inc. warrants Dura-Skrim J30BB, J36BB, and J45BB to be free from manufacturing defects and to be able to withstand normal exposure to sunlight for a period of 20 years from the date of sale for normal use in approved applications in the U.S and Canada, excluding Hawaii. This warranty is effective for products sold and shipped from January 1, 2008 to December 31, 2008.

This Limited Warranty does not include damages or defects in the Raven geomembrane resulting from acts of God, casualty or catastrophe including but not limited to: earthquakes, floods, piercing hail, or tornadoes. The term "normal use" as used herein does not include, among other things improper handling during transportation, unloading, storage or installation, the exposure of Raven geomembranes to harmful chemicals, atypical atmospheric conditions, abuse of Raven geomembranes by machinery, equipment or people; improper site preparation or covering materials, excessive pressures or stresses from any source or improper application or installation. Raven geomembrane material warranty is intended for commercial use only and is not in effect for the consumer as defined in the Magnuson Moss Warranty or any similar federal, state, or local statues. The parties expressly agree that the sale hereunder is for commercial or industrial use only.

Should defects or premature loss of use within the scope of the above Limited Warranty occur, Raven Industries Inc. will, at its option, repair or replace the Raven geomembrane on a pro-rata basis at the then current price in such manner as to charge the Purchaser/User only for that portion of the warranted life which has elapsed since purchase of the material. Raven Industries Inc. will have the right to inspect and determine the cause of any alleged defect in the Raven geomembrane and to take appropriate steps to repair or replace the Raven geomembrane if a defect exists which is covered under this warranty. This Limited Warranty extends only to Raven's geomembrane, and does not extend to the installation service of third parties nor does it extend to materials furnished or installed by others in connection with the intended use of the Raven geomembranes.

Any claim for any alleged breach of this warranty must be made in writing, by certified mail, to the General Manager of Engineered Films Division of Raven Industries Inc. within ten (10) days of becoming aware of the alleged defect. Should the required notice not be given, the defect and all warranties are waived by the Purchaser, and Purchaser shall not have any rights under this warranty. Raven Industries Inc. shall not be obligated to perform repairs or replacements under this warranty unless and until the area to be repaired or replaced is clean, dry, and unencumbered. This includes, but is not limited to, the area made available for repair and/or replacement of Raven geomembrane to be free from all water, dirt, sludge, residuals and liquids of any kind. If after inspection it is determined that there is no claim under this Limited Warranty, Purchaser shall reimburse Raven Industries Inc. for its costs associated with the site inspection.

In the event the exclusive remedy provided herein fails in its essential purpose, and in that event only, the Purchaser shall be entitled to a return of the purchase price for so much of the material as Raven Industries Inc. determines to have violated the warranty provided herein. Raven Industries Inc. shall not be liable for direct, indirect, special, consequential or incidental damages resulting from a breach of this warranty including, but not limited to, damages for loss of production, lost profits, personal injury or property damage. Raven Industries Inc. shall not be obligated to reimburse Purchaser for any repairs, replacement, modifications or alterations made by Purchaser unless Raven Industries Inc. specifically authorized, in writing, said repairs, replacements, modifications or alteration in advance of them having been made. Raven Industry's liability under this warranty shall in no event exceed the replacement cost of the material sold to the Purchaser for the particular installation in which it failed.

Raven Industries Inc. neither assumes nor authorizes any person other than the undersigned of Raven Industries Inc. to assume for it any other or additional liability in connection with the Raven geomembrane made on the basis of the Limited Warranty. The Limited Warranty on the Raven geomembrane herein is given in lieu of all other possible material warranties, either expressed or implied, and by accepting delivery of the material; Purchaser waives all other possible warranties, except those specifically given. This Limited Warranty may only be modified by written document mutually executed by Owner and Raven Industries Inc.

Limited Warranty is extended to the purchaser/owner and is non-transferable and non-assignable; i.e., there are no third-party beneficiaries to this warranty.

Purchaser acknowledges by acceptance that the Limited Warranty given herein is accepted in preference to any and other possible materials warranties.

THIS LIMITED WARRANTY SHALL BE GOVERNED BY SOUTH DAKOTA LAW AND VENUE FOR ALL LEGAL PROCEEDINGS IN CONNECTION WITH THIS LIMITED WARRANTY SHALL BE IN MINNEHAHA COUNTY, SOUTH DAKOTA. RAVEN INDUSTRIES INC. MAKES NO WARRANTY OF ANY KIND OTHER THAN THAT GIVEN ABOVE AND HEREBY DISCLAIMS ALL WARRANTIES, BOTH EXPRESSED OR IMPLIED, OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THIS IS THE ONLY WARRANTY THAT APPLIES TO THE MATERIALS REFERRED TO HEREIN AND RAVEN INDUSTRIES INC. DISCLAIMS ANY LIABILITY FOR ANY WARRANTIES GIVEN BY ANY OTHER PERSON OR ENTITY, EITHER WRITTEN OR ORAL.

RAVEN INDUSTRIES' WARRANTY BECOMES AN OBLIGATION OF RAVEN INDUSTRIES INC. TO PERFORM UNDER THE WARRANTY ONLY UPON RECEIPT OF FINAL PAYMENT AND EXECUTION BY A DULY AUTHORIZED OFFICER OF RAVEN INDUSTRIES INC.

## Burlington Resources Oil & Gas Company, LP San Juan Basin Below Grade Tank Maintenance and Operating Plan

In accordance with Rule 19.15.17 the following information describes the operation and maintenance of Below Grade Tank (BGT) on Burlington Resources Oil & Gas Company, LP (BR) locations. This is BR's standard procedure for all BGT. A separate plan will be submitted for any BGT which does not conform to this plan.

#### General Plan:

- BR will operate and maintain a BGT to contain liquids and solids and maintain the integrity of the liner, liner system and secondary containment system to prevent contamination of fresh water and protect public health and environment. BR will accomplish this by performing an inspection on a monthly basis, installing cathodic protection, and automatic overflow shutoff devices as seen on the design plan.
- 2. BR will not discharge into or store any hazardous waste in the BGT.
- 3. BR shall operate and install the below-grade tank to prevent the collection of surface water run-on. BR has built in shut off devices that do not allow a below-grade tank to overflow. BR constructs berms and corrugated retaining walls at least 6" above ground to keep from surface water run-on entering the below grade tank as shown on the design plan.
- 4. As per 19.17.15.12 Subsection D, Paragraph 3, BR will inspect the below-grade tank at least monthly reviewing several items which include 1) containment berms adequate and no oil present, 2) tanks had no visible leaks or sign of corrosion, 3) tank valves, flanges, and hatches had no visible leaks and 4) no evidence of significant spillage of produced liquids. In addition, BR's multi-skilled operators (MSOs) are required to visit each well location once per week. If detected on either inspection, BR shall remove any visible or measurable layer of oil from the fluid surface of a below-grade tank in an effort to prevent significant accumulation of oil overtime. The written record of the monthly inspections will include the items listed above and will be maintained for five years.
- 5. BR shall require and maintain a 10" adequate freeboard to prevent overtopping of the below-grade tank.
- 6. If the below grade tank develops a leak, or if any penetration of the pit liner or below grade tank, occurs below the liquid's surface, then BR shall remove all liquid above the damage or leak line within 48 hours. BR shall notify the appropriate district office. BR shall repair or replace the pit liner or below grade tank, within 48 hours of discovery. If the below grade tank or pit liner does not demonstrate integrity, BR shall promptly remove and install a below grade tank or pit liner that complies with Subsection I of 19.15.17.11 NMAC. BR shall notify the appropriate district office of a discovery of leaks less than 25 barrels as required pursuant to Subsection B of 19.15.3.116 NMAC shall be reported within twenty-four (24) hours of discovery of leaks greater than 25 barrels. In addition, immediate verbal notification pursuant to Subsection B, Paragraph (1), and Subparagraph (d) of 19.15.3.116 NMAC shall be reported to the division's Environmental Bureau Chief.

## Burlington Resources Oil & Gas Company, LP San Juan Basin Below Grade Tank Closure Plan

In accordance with Rule 19.15.17.13 NMAC the following information describes the closure requirements of Below Grade Tanks (BGTs) on Burlington Resources Oil & Gas Company, LP locations hereinafter known as BR locations. This is BR's standard procedure for all BGTs. A separate plan will be submitted for any BGT which does not conform to this plan.

#### General Requirements:

- BR shall close a below-grade tank within the time periods provided in Subsection A of 19.15.17.13 NMAC. This will include a) below-grade tanks that do not meet the requirements of Paragraphs (1) through (4) of Subsection I of 19.15.17.11 NMAC or is not included in Paragraph (5) of Subsection I o f19.15.17.11 NMAC within five years, if not retrofitted to comply with Paragraphs (1) through (4) of Subsection I of 19.15.17.11 NMAC; b) permitted below-grade tanks within 60 days of cessation of the below-grade tank's operation., or c) an earlier date that the division requires because of imminent danger to fresh water, public health or the environment. For any closure, BR will file the C144 Closure Report as required.
- BR shall remove liquids and sludge from a below-grade tank prior to implementing a closure method and shall dispose of the liquids and sludge in a division-approved facility. The facilities to be used will be Basin Disposal (Permit #NM-01-005) and Envirotech Land Farm (Permit #NM-01-011). The liner after being cleaned well (Subsection D, Paragraph 1, Subparagraph (m) of 19.15.9.712 NMAC) will be disposed of at the San Juan County Regional Landfill located on CR 3100.
- 3. BR will receive prior approval to remove the below-grade tank and dispose of it in a division-approved facility or recycle, reuse, or reclaim it in a manner that the appropriate division district office approves. Documentation of how the below-grade tank was disposed of or recycled will be provided in the closure report.
- 4. If there is any on-site equipment associated with a below-grade tank, then BR shall remove the equipment, unless the equipment is required for some other purpose.
- 5. BR shall test the soils beneath the below-grade tank to determine whether a release has occurred. BR shall collect, at a minimum, a five point, composite sample; collect individual grab samples from any area that is wet, discolored or showing other evidence of a release; and analyze for BTEX, TPH and chlorides to demonstrate that the benzene concentration, as determined by EPA SW-846 methods 8021B or 8260B or other EPA method that the division approves, does not exceed 0.2 mg/kg; total BTEX concentration, as determined by EPA SW-846 methods 8021B or 8260B or other EPA method that the division approves, does not exceed 0.2 mg/kg; total BTEX concentration, as determined by EPA SW-846 methods 8021B or 8260B or other EPA method that the division approves, does not exceed 50 mg/kg; the TPH concentration, as determined by EPA method 418.1 or other EPA method that the division approves, does not exceed 50 mg/kg; or other EPA method 300.1 or other EPA method that the division approves, does not exceed 250 mg/kg, or the background concentration, whichever is greater. BR shall notify the division of its results on form C-141.
- 6. If BR or the division determines that a release has occurred, then BR shall comply with 19.15.3.116 NMAC and 19.15.1.19 NMAC, as appropriate.

- 7. If the sampling program demonstrates that a release has not occurred or that any release does not exceed the concentrations specified in Paragraph (4) of Subsection E of 19.15.17.13 NMAC, then BR shall backfill the excavation with compacted, non-waste containing, earthen material; construct a division-prescribed soil cover; recontour and re-vegetate the site.
- 8. Notice of Closure will be given prior to closure to the Aztec Division office between 72 hours and one week via email or verbally. The notification of closure will include the following:
  - i. Operator's name
  - ii. Location by Unit Letter, Section, Township, and Range. Well name and API number.
- The surface owner shall be notified of BR's closing of the below-grade tank prior to closure as per the approved closure plan via certified mail, return receipt requested.
- 10. Re-contouring of location will match fit, shape, line, form and texture of the surrounding. Re-shaping will include drainage control, prevent ponding, and prevent erosion. Natural drainages will be unimpeded and water bars and/or silt traps will be place in areas where needed to prevent erosion on a large scale. Final re-contour shall have a uniform appearance with smooth surface, fitting the natural landscape.
- 11. BR shall seed the disturbed areas the first growing season after the operator closes the pit. Seeding will be accomplished via drilling on the contour whenever practical or by other division-approved methods. BLM stipulated seed mixes will used on federally jurisdicted lands and division-approved seed mixtures (administratively approved if required) will be utilized on all State or private lands. Vegetative cover will equal 70% of the native perennial vegetative cover (un-impacted) consisting of at least three native plant species, including at least one grass, but not including noxious weeds, and maintain that cover through two successive growing seasons. If alternate seed mix is required by the state, private owner or tribe, it will be implemented with administrative approval if needed. BR will repeat seeding or planting will be continued until successful vegetative growth occurs.
- 12. A minimum of four feet of cover shall be achieved and the cover shall include one foot of suitable material to establish vegetation at the site, or the background thickness of topsoil, whichever is greater.
- 13. All closure activities will include proper documentation and be available for review upon request and will be submitted to OCD within 60 days of closure of the below-grade tank. Closure report will be filed on C-144 and incorporate the following:
  - Soil Backfilling and Cover Installation
  - Re-vegetation application rates and seeding techniques
  - Photo documentation of the site reclamation
  - Confirmation Sampling Results
  - Proof of closure notice