# State of New Mexico Energy Minerals and Natural Resources Department

Form C-144 July 21, 2008

District II

1301 W. Grand Ave., Artesia, NM 88210

District III

1000 Rio Brazos Rd., Aztec, NM 87410

District IV

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

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 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 copy to the appropriate NMOCD District Office.

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

8164
------

Type of action:

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

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

Modification to an existing permit

Closure plan only submitted for an existing permitted or non-permitted pit, closed-loop system, below-grade tank, or proposed alternative method

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

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

environment. Nor does approval relieve the operator of its responsibility to comply	vith any other applicable governmental authority's rules, regulations or ordinances.
Operator: ConocoPhillips Company	OGRID#: 217817
Address: PO Box 4289, Farmington, NM 87499	
Facility or well name: SAN JUAN 31-6 UNIT 224A	
API Number: 30-039- 30 237	OCD Permit Number:
U/L or Qtr/Qtr: P(SE/SE) Section: 31 Township: 31N	Range: 6W County: Rio Arriba
Center of Proposed Design: Latitude: 36.850249 °N	Longitude: <b>107.495395 °W</b> NAD: <b>1927 X</b> 1983
Surface Owner: X Federal State Private 1	ribal Trust or Indian Allotment
Pit: Subsection F or G of 19.15.17.11 NMAC  Temporary: Drilling Workover  Permanent Emergency Cavitation P&A  Lined Unlined Liner type: Thickness mil  String-Reinforced  Liner Seams: Welded Factory Other	LLDPE HDPE PVC Other  Volume: bbl Dimensions L x W x D
3 X Closed-loop System: Subsection H of 19.15.17.11 NMAC Type of Operation: P&A X Drilling a new well Workover of notice of in X Drying Pad X Above Ground Steel Tanks Haul-off Bins X Lined Unlined Liner type: Thickness 20 mil	or Drilling (Applies to activities which require prior approval of a permit or tent)  Other  X LLDPE HDPE PVD Other
Liner Seams: X Welded X Factory Other	- NEDE CIVED
4 Below-grade tank: Subsection I of 19.15.17.11 NMAC Volume: bbl Type of fluid: Tank Construction material:	APR 2011
Secondary containment with leak detection Visible sidewalls, lin	er, 6-inch lift and automatic overflow shut-off ther
5 Alternative Method: Submittal of an exception request is required. Exceptions must be submitted to	the Santa Fe Environmental Bureau office for consideration of approval.

6 Fencing: Subsection D of 19.15.17.11 NMAC (Applies to permanent pit, temporary pits, and below-grade tanks)		
Chair link giv fact in beight two strongs of bashed wire atten (Davided if langed within 1000 few of a narrangent waitlenge saked begainst institution as absorb		
Chain link, six feet in height, two strands of barbed wire at top (Required if located within 1000 feet of a permanent residence, school, hospital, institution or church)  Four foot height, four strands of barbed wire evenly spaced between one and four feet		
Alternate. Please specify		
Netting: Subsection E of 19.15.17.11 NMAC (Applies to permanent pits and permanent open top tanks)		
Screen Netting Other		
Monthly inspections (If netting or screening is not physically feasible)		
8		
Signs: Subsection C of 19.15.17.11 NMAC	•	
12" X 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers	·	
X Signed in compliance with 19.15.3.103 NMAC		
9 Administrative Approvals and Exceptions:		
Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17 NMAC for guidance.		
Please check a box if one or more of the following is requested, if not leave blank:		
Administrative approval(s): Requests must be submitted to the appropriate division district of the Santa Fe Environmental Bureau office for cons (Fencing/BGT Liner)	ideration of app	oroval.
Exception(s): Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.		
10		
Siting Criteria (regarding permitting): 19.15.17.10 NMAC		
Instructions: The applicant must demonstrate compliance for each siting criteria below in the application. Recommendations of 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		٠.
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.	Yes	□No
- 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	Yes	No
(measured from the ordinary high-water mark).  - Topographic map; Visual inspection (certification) of the proposed site	i 	
	□Yes	П
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.	Lilles	
(Applies to temporary, emergency, or cavitation pits and below-grade tanks)	NA	
- Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	<u> </u>	
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.	Yes	No
(Applied to permanent pits)	□NA	
- 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 horizontal feet of any other fresh water well or spring, in existence at the time of initial application.	Yes	No
- NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site.		
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended  - Written confirmation or verification from the municipality, Written approval obtained from the municipality	Yes	□No
Within 500 feet of a wetland.  - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	Yes	□No
Within the area overlying a subsurface mine.	Yes	□No
<ul> <li>Written confirmation or verification or map from the NM EMNRD - Mining and Mineral Division</li> <li>Within an unstable area.</li> </ul>	∏Yes	□No
- Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	L 160 .	U'''
Within a 100-year floodplain - FEMA map	Yes	No

Temporary Pits, Emergency Pits and Below-grade Tanks Permit Application Attachmen	
Instructions: Each of the following items must be attached to the application. Please indicate, by a che	eck mark in the box, that the documents are attached.
Hydrogeologic Report (Below-grade Tanks) - based upon the requirements of Paragraph	h (4) of Subsection B of 19.15.17.9 NMAC
Hydrogeologic Data (Temporary and Emergency Pits) - based upon the requirements of	f Paragraph (2) of Subsection B of 19.15.17.9
Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of	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	7.12 NMAC
Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the app	
19.15.17.9 NMAC and 19.15.17.13 NMAC	· ·
Previously Approved Design (attach copy of design)  API	or Permit
	Of I CHIRC
Closed-loop Systems Permit Application Attachment Checklist: Subsection B of 19.15.17.9 Instructions: Each of the following items must be attached to the application. Please indicate, by a che	eck mark in the box, that the documents are attached.
Geologic and Hydrogeologic Data (only for on-site closure) - based upon the requireme  Siting Criteria Compliance Demonstrations (only for on-site closure) - based upon the a	
X   Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC	appropriate requirements of 19.13.17.10 (vivive)
	7.10.10.44.6
X Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17	
X Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the app NMAC and 19.15.17.13 NMAC	propriate requirements of Subsection C of 19.15.17.9
Previously Approved Design (attach copy of design) API	
Previously Approved Operating and Maintenance Plan API	
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 continuous property of the property of Paragraph (I) of Subsection B of 19.15.17.9 NMAC	
Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of Climatelegical Feature Assessment	01 19.13.17.10 NIMAC
☐ Climatological Factors Assessment ☐ Certified Engineering Design Plans - based upon the appropriate requirements of 19.15	17.11 NMAC
1 =	
Dike Protection and Structural Integrity Design: based upon the appropriate requirement	
Leak Detection Design - based upon the appropriate requirements of 19.15.17.11 NMA	
Liner Specifications and Compatibility Assessment - based upon the appropriate require	ements of 19.15.17.11 NMAC
Quality Control/Quality Assurance Construction and Installation Plan	7.10.10.44.0
Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17	
Freeboard and Overtopping Prevention Plan - based upon the appropriate requirements	or 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: 19.15.17.13 NMAC Instructions: Please complete the applicable boxes, Boxes 14 through 18, in regards to the proposed	closure plan
	Pit Below-grade Tank X Closed-loop System
	The low-grade Talik Mclosed-100p System
Alternative  Proposed Clasure Method: Wester Evaporation and Removal	
Proposed Closure Method: Waste Excavation and Removal	
X Waste Removal (Closed-loop systems only)	
On-site Closure Method (only for temporary pits and closed-loop	p systems)
In-place Burial On-site Trench	
Alternative Closure Method (Exceptions must be submitted to the	ne Santa Fe Environmental Bureau for consideration)
Waste Excavation and Removal Closure Plan Checklist: (19.15.17.13 NMAC) Instructions: In Plans indicate has a clock waste in the law that the decembers are attached.	Each of the following items must be attached to the closure plan.
Please indicate, by a check mark in the box, that the documents are attached.  Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NN	AAC .
	·
Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of	
Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cutting	
Soil Backfill and Cover Design Specifications - based upon the appropriate requiremen	
Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.	
Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19	P.15.17.13 NMAC

Form C-144 Oil Conservation Division Page 3 of 5

16		
<u>Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only:</u> (19.15.17.13.D NMAC)  Instructions: Please identify the facility or facilities for the disposal of liquids, drilling fluids and drill cuttings. Use attachment if more than two		
facilities are required.		
Disposal Facility Name: Envirotech / JFJ Landfarm % IEI Disposal Facility Permit #: NM-01-0011 / NM-01-0	010B	
Disposal Facility Name: Basin Disposal Facility Disposal Facility Permit #: NM-01-005		
Will any of the proposed closed-loop system operations and associated activities occur on or in areas that will not be used for future  Yes (If yes, please provide the information No	service and	
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 Subsection II of 19.15.17.13 NM  Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC	AC	
Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC		
17 Siting Criteria (Regarding on-site closure methods only: 19.15.17.10 NMAC		
Instructions: Each siting criteria requires a demonstration of compliance in the closure plan. Recommendations of acceptable source material are provided		
certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to office for consideration of approval. Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17.10 NMAC for guidance.	o the Santa Fe Environmental Bureau	
Ground water is less than 50 feet below the bottom of the buried waste.	Yes No	
- NM Office of the State Engineer - iWATERS database search; USGS: Data obtained from nearby wells		
	☐Yes ☐No	
Ground water is between 50 and 100 feet below the bottom of the buried waste  - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	N/A	
- NW Office of the State Engineer - IWATERS database search, 0505, Data obtained from hearby wells		
Ground water is more than 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 wells	∐ N/A	
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).	Yes No	
- Topographic map; Visual inspection (certification) of the proposed site		
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.	Yes No	
- Visual inspection (certification) of the proposed site; Aerial photo; satellite image		
	Yes No	
Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal fee of any other fresh water well or spring, in existence at the time of the initial application.  - NM Office of the State Engineer - iWATERS database; Visual inspection (certification) of the proposed site		
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended.	Yes No	
- Written confirmation or verification from the municipality; Written approval obtained from the municipality		
Within 500 feet of a wetland	Yes No	
- US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site		
Within the area overlying a subsurface mine.  - Written confirantion or verification or map from the NM EMNRD-Mining and Mineral Division	Yes No	
Within an unstable area.	☐Yes ☐No	
- Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society;		
Topographic map		
Within a 100-year floodplain FEMA map	Yes No	
18		
On-Site Closure Plan Checklist: (19.15.17.13 NMAC) Instructions: Each of the following items must bee attached to the close by a check mark in the box, that the documents are attached.	ure plan. Please indicate,	
Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC		
Proof of Surface Owner Notice - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC		
Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements of 19.15.17.11 NMAC		
Construction/Design Plan of Temporary Pit (for in place burial of a drying pad) - based upon the appropriate requirements o	F19.15.17.11 NMAC	
Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC		
Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC		
Waste Material Sampling Plan - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC		
Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings or in case on-site closure standards cannot be achieved)		
Soil Cover Design - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC		
Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC		
Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC		

Form C-144 Oil Conservation Division

19 Operator Application Certification:	
I hereby certify that the information submitted with this application is true, accura	ate and complete to the best of my knowledge and belief.
Name (Print): Jamie Goodwin	Title: Regulatory Technician
Signature: (10001.Au	Date:
e-mail address: Jamie.L.Goodwin@conocophillips.com	Telephone: 505-326-9784
20 OCD Approval: Permit Application (including closure plan)	Closure Plan (only) OCD Conditions (see attachment)
$\overline{}$	c Clay ly
OCD Representative Signature:	Approval Date: 5/26/11
Title:	OCD Permit Number:
	o implementing any closure activities and submitting the closure report. The closure on of the closure activities. Please do not complete this section of the form until an
	Closure Completion Date:
Closure Method:  Waste Excavation and Removal On-site Closure Method  If different from approved plan, please explain.	Alternative Closure Method Waste Removal (Closed-loop systems only)
23	All and an
Closure Report Regarding Waste Removal Closure For Closed-loop Systems	
Instructions: Please identify the facility or facilities for where the liquids, drilli were utilized.	ing fluids and drill cuttings were disposed. Use attachment if more than two facilities
Disposal Facility Name:	Disposal Facility Permit Number:
Disposal Facility Name:	Disposal Facility Permit Number:
Were the closed-loop system operations and associated activities performed o	on or in areas that will not be used for future service and opeartions?
Yes (If yes, please demonstrate complilane to the items below)	No
Required for impacted areas which will not be used for future service and op	perations:
Site Reclamation (Photo Documentation)  Soil Backfilling and Cover Installation	
Re-vegetation Application Rates and Seeding Technique	
Name of the state	
Closure Report Attachment Checklist: Instructions: Each of the following	owing items must be attached to the closure report. Please indicate, by a check mark in
the box, that the documents are attached.	
Proof of Closure Notice (surface owner and division)	
Proof of Deed Notice (required for on-site closure)	
Plot Plan (for on-site closures and temporary pits)	
Confirmation Sampling Analytical Results (if applicable)	
Waste Material Sampling Analytical Results (if applicable)	
Disposal Facility Name and Permit Number	
Soil Backfilling and Cover Installation  Re-vegetation Application Rates and Seeding Technique	
Site Reclamation (Photo Documentation)	
On-site Closure Location: Latitude:	Longitude: NAD 1927 1983
25	
Operator Closure Certification:	e report is ture, accurate and complete to the best of my knowledge and belief. I also certify that ecified in the approved closure plan.
Name (Print):	Title:
Signature:	Date:
e-mail address:	Telephone:

## ConocoPhillips Company

#### **Closed Loop Design:**

The closed loop design will not incorporate a temporary pit or below grade tank. The plan will utilize an above grade tank suitable for holding the cuttings and fluids generated during drilling operations. The volume of the tank shall be of a sufficient volume to maintain an adequate free board for periodic removal and disposal of cuttings and fluids.

ConocoPhillips Company may incorporate the use of a 20 mil, string reinforced, LLDPE liner with factory welded seams to line the drying pad in order to minimize the volume of fluids to be disposed of. The drying pad will be designed to prevent contamination of fresh water, protect public health and the environment, and have sumps to facilitate the collection of liquids derived from drilling cuttings, as specified per subsection H of 19.15.17.11. The cuttings pad will be constructed above grade and containment will be through the use of earthen berms of sufficient height to contain the cuttings and prevent run-off of surface water or fluids. The drying pad area will replace the area of the drill site previously designated for the reserve pit. It will be signed in compliance with 19.15.3.103.NMAC. Frac tanks will be utilized on site for fresh water storage.

#### **Closed Loop Operations and Maintenance:**

The closed loop system will be operated and maintained for solids and liquid containment to prevent ground water contamination as follows:

- 1. Any free liquids will be recovered and reused or disposed of at the Basin Disposal Facility (Permit # NM-01-005) or JFJ Landfarm % Industrial Ecosystem Inc. (Permit # NM-01-0010B). Reuse may include the relocating of liquids to be used in other permitted drilling operations.
- 2. Drill solids will be recovered from location and hauled to Envirotech (Permit #NM-01-0011) or JFJ Landfarm % Industrial Ecosystem Inc. (Permit # NM-01-0010B) periodically as required to maintain a safe free board in the cuttings tank. No onsite trench burial of cuttings will occur.
- 3. In the event a drying pad is utilized, the cuttings will be picked up and transported to Basin Disposal Facility (Permit #NM-01-005) or JFJ Landfarm % Industrial Ecosystem Inc. (Permit # NM-01-0010B). The liner will be disposed of at the San Juan County Landfill located on CR 3100. The drying pad will be closed within 6 months from the date that the drilling rig is released. Berms constructed from native materials will be bladed on site to the location's contour.
- 4. Any drilling materials or trash will be stored and disposed of appropriately.
- 5. The NMOCD will be notified within 48 hours of the discovery of compromised integrity of the closed loop containment. Any required repairs will commence immediately.

### **Closed Loop Closure Plan:**

1. Upon completion of the drilling operations, all solids and liquids will be removed and disposed of to Envirotech (Permit #NM-01-0011) and/or Basin Disposal Facility (Permit #NM-01-005) and/or JFJ Landfarm % Industrial Ecosystem Inc. (Permit #NM-01-0010B). Equipment shall also be removed from location. In the event a drying pad is utilized, the solids contained on the pad shall remain on site to allow sufficient drying and will then be transported to Envirotech (Permit #NM-01-0011) or JFJ Landfarm % Industrial Ecosystem Inc. (Permit #NM-01-0010B) within 6 months from the date that the drilling rig is released.

2. After the drying pad is removed the surface below will be visually inspected for any contamination. If contamination is discovered a five point composite sample will be taken of the drying pad area using sampling tools and all samples tested per Subsection B of 19.15.17.13(B)(1)(b). In the event that the criteria are not met, all contents will be handled per Subparagraph (a) of Paragraph (1) of Subsection B of 19.15.17.13 i.e., Dig and haul.

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

- 3. 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.
- 4. Notification will be sent to OCD when the reclaimed area is seeded.
- 5. COP shall seed the disturbed areas the first growing season after the operator closes the drying pad. Seeding will be accomplished via drilling on the contour whenever practical or by other division-approved methods. BLM or Forest Service stipulated seed mixes will used on federal 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. Repeat seeding or planting will be continued until successful vegetative growth occurs.

Туре	Variety or Cultivator	PLS/A
Western wheatgrass	Arriba	3.0
Indian ricegrass	Paloma or Rimrock	3.0
Slender wheatgrass	San Luis	2.0
Crested wheatgrass	Hy-crest	3.0
Bottlebrush Squirreltail	Unknown	2.0
Four-wing Saltbrush	Delar	.25

Species shall be planted in pounds of pure live seed per acre: Present Pure Live Seed (PLS) = Purity X Germination/100 Two lots of seed can be compared on the basis of PLS as follows:

Source No. One (poor quality)

Purity

50 percent

Germination

Source No. two (better quality)

Purity

80 percent

Germination

63 percent

Percent PLS 20 percent PLS 50 percent 5 lb. bulk seed required to make Percent PLS 50 percent 2 lb. bulk seed required to make

1 lb. PLS 1 lb. PLS