State of New Mexico
Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

David Martin
Cabinet Secretary-Designate

Brett F. Woods, Ph.D.
Deputy Cabinet Secretary

Jami Bailey, Division Director
Oil Conservation Division

New Mexico Oil Conservation Division approval and conditions listed below are made in accordance with OCD Rule 19.15.7.11 and are in addition to the actions approved by BLM on the following 3160-3 APD form.

Operator Signature Date: 7/1/14
Well information;
Operator TnT Environ., Well Name and Number TnT SWD #1
API# 30-039-31257, Section 8 Township 25 N/S, Range 3 E/W

Conditions of Approval:
(See the below checked and handwritten conditions)

- [x] Notify Aztec OCD 24hrs prior to casing & cement. SWD Order ReQuired Before Spud.
- [ ] Hold C-104 for directional survey & "As Drilled" Plat
- [ ] Hold C-104 for NSL, NSP, DHC
- [ ] Spacing rule violation. Operator must follow up with change of status notification on other well to be shut in or abandoned
- [x] Regarding the use of a pit, closed loop system or below grade tank, the operator must comply with the following as applicable:
  - A pit requires a complete C-144 be submitted and approved prior to the construction or use of the pit, pursuant to 19.15.17.8.A
  - A closed loop system requires notification prior to use, pursuant to 19.15.17.9.A
  - A below grade tank requires a registration be filed prior to the construction or use of the below grade tank, pursuant to 19.15.17.8.C
- [ ] Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string
- [x] Regarding Hydraulic Fracturing, review EPA Underground Injection Control Guidance 84
- [x] Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system.

Charlie Perrin
NMOCD Approved by Signature

9-10-14
Date

Form 3160-3
(August 2007)

RECEIVED
JUL 16 2014
Farmington Field Office
Bureau of Land Management

FORM APPROVED
OMB No. 1004-0137
Expires July 31, 2010

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
FEE/NMNM 023041

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

7. If Unit or CA Agreement, Name and No.

1b. Type of Well: ☐ Oil Well ☐ Gas Well ☑ Other ☑ Single Zone ☐ Multiple Zone

8. Lease Name and Well No.
TnT SWD #1

2. Name of Operator TnT Environmental Inc.

9. API Well No.
30-039-31257

3a. Address HC 74 Box 113
Lindrith, NM 87029

3b. Phone No. *(include area code)*
505-320-2130

10. Field and Pool, or Exploratory
Entrada SWD

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface 439' fwl & 1761' fsl Sec 8, T25N, R3W
At proposed prod. zone Same

11. Sec., T. R. M. or Blk. and Survey or Area
Surface: Sec 8, T25N, R3W

14. Distance in miles and direction from nearest town or post office*
~14.2 miles NW of Lindrith, NM

12. County or Parish
Rio Arriba

13. State
NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 439'

16. No. of acres in lease
520 acres

17. Spacing Unit dedicated to this well
n/a

RCVD SEP 2'14
OIL CONS. DIV.

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.

19. Proposed Depth
9200'

20. BLM/BIA Bond No. on file
NMB001180

DIST. 3

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
7148' GL

22. Approximate date work will start*
09/01/2014

23. Estimated duration
30 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification
6. Such other site specific information and/or plans as may be required by the BLM.

25. Signature John C. Thompson — Name *(Printed/Typed)* John Thompson — Date 07/01/2014

Title
Agent/Engineer

Approved by *(Signature)* Jim Mankiewicz — Name *(Printed/Typed)* — Date 8/27/14

Title AFM — Office FFO

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Continued on page 2)

This action is subject to technical and procedural review pursuant to 43 CFR 3165.3 and appeal pursuant to 43 CFR 3165.4

BLM'S APPROVAL OR ACCEPTANCE OF THIS ACTION DOES NOT RELIEVE THE LESSEE AND OPERATOR FROM OBTAINING ANY OTHER AUTHORIZATION REQUIRED FOR OPERATIONS ON FEDERAL AND INDIAN LANDS

*(Instructions on page 2)

DRILLING OPERATIONS AUTHORIZED ARE SUBJECT TO COMPLIANCE WITH ATTACHED "GENERAL REQUIREMENTS"

NMOCD

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Fancis Dr.
Santa Fe, NM 87505

RECEIVED
JUL 16 2014

Form C-102
Revised August 1, 2011
Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-039-31257	96436	SWD; Entrada

[4] Property Code	[5] Property Name	[6] Well Number
313694	TNT SWD	1

[7] OGRID No.	[8] Operator Name	[9] Elevation
308209	TNT Environmental	7148'

[10] Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L	8	T25N	R3W		1761'	SOUTH	439'	WEST	RIO ARRIBA

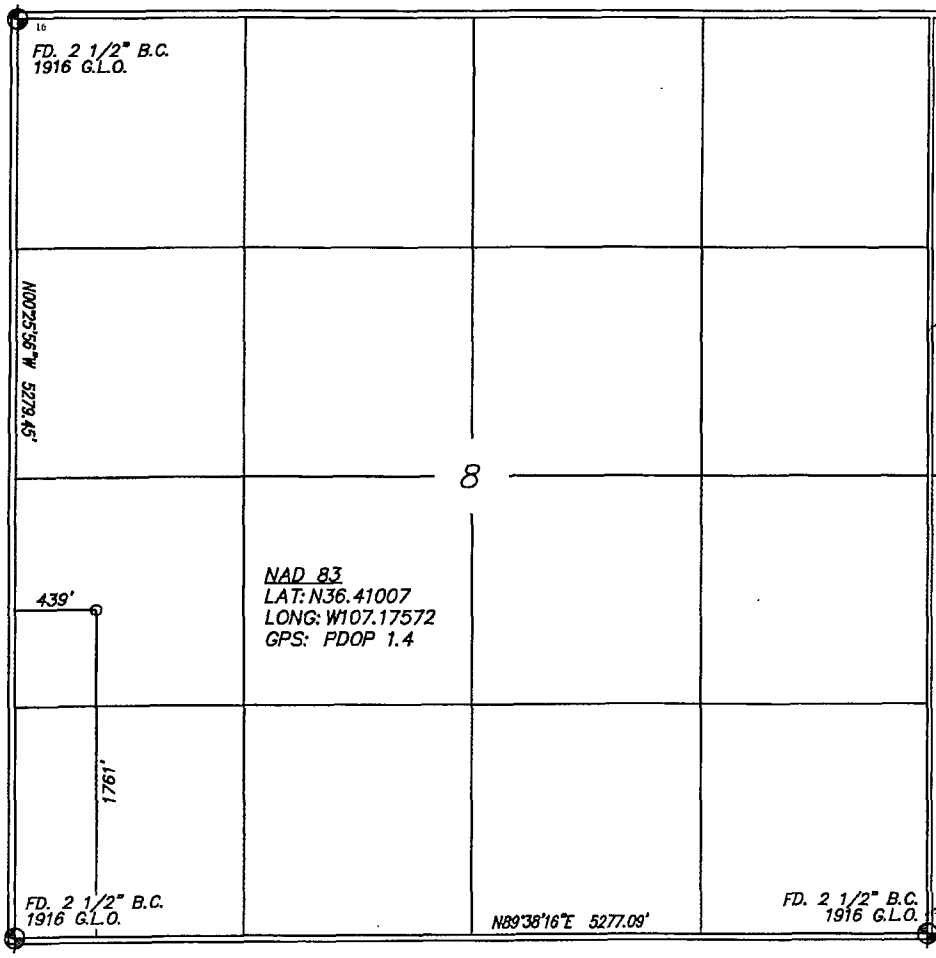
[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.

RCVD SEP 2'14
OIL CONS. DIV.
DIST. 3

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



[17] OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature — Date 7/1/2014

John C. Thompson
Printed Name

johncwalsh@q.net
E-mail Address

[18] SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the the best of my belief.

05/06/2014
Date of Survey

Signature and Seal of Professional Surveyor:

FRED B. KERR JR.
NEW MEXICO
9673
PROFESSIONAL LAND SURVEYOR

Certificate Number N.M. PLS #9673

Attachment To Application For Permit To Drill.
Drilling program

TnT Environmental

HC 74 Box 113
Lindrith, NM 87029
U.S.A

TnT SWD #1

Surface Location: 439' fwl & 1761' fsl
Section 8, T25N, R3W
Ungraded GL Elev: 7148'
Rio Arriba County, NM

Drilling program written in compliance with onshore Oil and Gas Order No. 1
(001 III.D.3, effective May 2007) and Onshore Order No. 2 Dated November 18,1988

1. Geological Name of Surface Formation / Estimate Formation Top

a. The following table identifies the geologic markers and formation tops (depth in feet from surface) based on open hole logs from off set wells in the area. .

FORMATION	EST FORMATION TOP
San Jose	Surface
Nacimiento	2239'
Ojo Alamo	3255'
Kirtland	3371'
Pictured Cliffs	3653'
Lewis	3709'
Chacra	4559'
Menefee	5285'
Point Lookout	5388'
Mancos Shale	5816'
Gallup	6024'
Greenhorn	6855'
Graneros	7751'
Dakota	7847'
Burro Canyon	8068'
Morrison	8218'
Todilto	8905'
Entada	8921'
Chinle	9188'
Total Well Depth	9200'

2. Estimated Depth of all Zones Anticipated to Have Fluid Occurrences (Oil, Gas, Water)

a. All formations listed in the table above may expected to contain some water, but historically oil and

gas zones can be expected in the Pictured Cliffs, Mesaverde Group, Gallup and Dakota formations.

3. Pressure Control Equipment

a. Blowout Preventer (BOP) Equipment

DEPTH INTERVAL	BOP EQUIPMENT
0-500'	No Pressure control Required
500' – 9200'	11" 2000 psi double ram type BOP

i. Drilling spool to accommodate choke and kill lines with choke manifold rated to 2000 psi.

b. Ancillary Equipment

i. Upper Kelly cock and lower Kelley cock will be installed while drilling.

ii. Inside BOP or stab in valve will be available in open position on rig floor at all times.

iii. Safety valves and subs to fit all string connections in use.

c. Choke Manifold

i. Refer to Figure Drill-1 for detailed schematics for each hole section.

d. BOP Testing

i. Initial 11" 2K BOP stack will be installed in casing head after setting 9.625" surface casing.

ii. The BLM and NMOCD will be notified 24 hours in advance of all BOP pressure tests.

iii. Pressure tests will be conducted on the BOP stack using a test plug and independent test company after nipple up.

iv. Subsequent BOP tests will be conducted a minimum of every 30 days. A new test will be conducted each time the stack is altered.

v. All BOP and manifold tests will be in accordance with the requirements of Onshore Order No. 2.

e. BOP Test Pressures

9.625" BOP			
Pressure Test	Ram Test	Manifold Test	
High Pressure	2000 psi	2500 psi	
Low Pressure	250 psi	250 psi	

4. Proposed Bit and Casing Program

a. Bit Program
12 1/4" Surface Hole = Surface to 500'
8-3/4" hole = 500' to ~ 9200' = Production casing point

Casing Program – all casing stings are new casing

Casing & Hole Size	Weight	Grade	Coupling	Setting Depth (MD)	Comments
9-5/8" (12 1/4")	36 ppf	J-55	ST&C	0' - 500'	New casing. Cement to surface.
7" (8-3/4")	26 ppf	N-80	LT&C	0' - 9200' MD	New Casing. Cement to surface.
				DV tools at ~ 5850' & 3300'	

Casing strings below the conductor casing will be tested to .22 psi per foot of casing string length or 1500 psi, whichever is greater, but not to exceed 70% of the minimum internal yield.

Minimum casing design factors used:

Collapse -	1.125
Burst -	1.0
Jt. Strength -	1.60

Surface casing shall have a minimum of 1 centralizer per joint on the bottom three (3) joints, starting with the shoe joint for a total of (4) minimum centralizers. Centralizers will be placed 10' above the shoe on the shoe joint, on the 1st, 2nd and 3rd casing collars then every other joint to surface.

The production casing will be centralized using 1 centralizer on the first 10 jts and then every 4th joint to the surface. Each stage tool will have turbolizers placed on the joint above an below.

5. PROPOSED CEMENTING PROGRAM

The proposed cementing program has been designed to protect and/or isolate all usable water zones, potentially productive zones, lost circulation zones, abnormally pressured zones, and any prospectively valuable deposits of minerals. Any isolating medium other than cement shall receive approval prior to use. The casing setting depth shall be calculated to position the casing seat opposite a competent formation which will contain the maximum pressure to which it will be exposed during normal drilling operations. All indications of useable water shall be reported.

a) The proposed cementing program is as follows:

Top plugs shall be used to reduce contamination of cement by displacement fluid. A bottom plug or other acceptable technique, such as a pre-flush fluid, inner string cement method, etc. shall be utilized to help isolate the cement from contamination by the mud fluid being displaced ahead of the cement slurry.

Surface Casing Single Stage Job – (0-500'):
Excess – 125% over gauge hole – 12-1/4" hole and 9-5/8" casing
Top of Cement - Surface

Lead: 263 sx (365 cf) of Type III w/ 2% bwoc Calcium Chloride, 0.25 lbs/sx CelloFlake, 59.2% Fresh Water. 14.6 ppg, yield 1.39 cf/sx

Production Casing – Three Stage Job (0-9200'MD):
Excess – 50% over gauge hole – 8-3/4" hole and 7" casing
Top of Cement – Surface.

1st Stage Lead – 227 sx (452 cf) Premium Lite High Strength FM, 0.25% lbs/sx CelloFlake, 0.3% bwoc CD-32, 6.25 lbs/sx LCM-1, 1% bwoc FL-52A, 98% Fresh Water – 12.5 ppg, yield 1.99 cf/sx

1st Stage Tail -332 sx (458 cf) Type III, 1% bwoc Calcium Chloride, 0.25 lbs/sx Cello Flake, 0.2% bwoc FL-52A, 58.9% Fresh Water – 14.6 ppg, yield 1.38 cf/sx

Circulate minimum 4 hrs between stages

2nd Stage Lead – 235 sx (468 cf) Premium Lite High Strength FM, 0.25% lbs/sx CelloFlake, 0.3% bwoc CD-32, 6.25 lbs/sx LCM-1, 1% bwoc FL-52A, 98% Fresh Water – 12.5 ppg, yield 1.99 cf/sx

2nd Stage Tail -113 sx (156 cf) Type III, 1% bwoc Calcium Chloride, 0.25 lbs/sx Cello Flake, 0.2% bwoc FL-52A, 58.9% Fresh Water – 14.6 ppg, yield 1.38 cf/sx

Circulate minimum 4 hrs between stages

3rd Stage Lead – 306 sx (609 cf) Premium Lite High Strength FM, 0.25% lbs/sx CelloFlake, 0.3% bwoc CD-32, 6.25 lbs/sx LCM-1, 1% bwoc FL-52A, 98% Fresh Water – 12.5 ppg, yield 1.99 cf/sx

3rd Stage Tail -109 sx (150 cf) Type III, 1% bwoc Calcium Chloride, 0.25 lbs/sx Cello Flake, 0.2% bwoc FL-52A, 58.9% Fresh Water – 14.6 ppg, yield 1.38 cf/sx

Total sacks of cement pumped = 1322 sx
Cement volumes are minimums and may be adjusted based on caliper log results.

Actual volumes will be calculated and determined by conditions onsite. All cement slurries will meet or exceed minimum BLM and State of New Mexico Oil & Gas Division requirements. Slurries used will be the slurries listed above or equivalent slurries depending on service provider selected. Cement yields may change depending on slurries selected.

All waiting on cement times shall be a minimum of 8 hours or adequate to achieve a minimum of 500 psi compressive strength at the casing shoe prior to drilling out.

6. **Proposed Drilling Fluid Program**

a. Mud type and properties

Hole Size (in)	TVD (ft)	Mud Type	Density (lb/gal)	Viscosity (sec/qt)	Fluid Loss (cc)
12 1/4"	0-500'	Fresh Mud LSND	8.8 - 9.0	45 - 100	6 or less
[redacted] 8-3/4"	0' - 9200' 500'	Fresh Mud LSND	8.8- 9.8	45 - 100	6 or less

i. Reserve pit will be constructed as per NMOCD requirements. Enough barite will be kept onsite to weight mud sufficiently to contain any unexpected pressures.

b) Monitoring

i. Mud volume and flow will be monitored visually.

7. Formation Evaluation Program

Cores	None anticipated
Testing	None anticipated
Sampling	None anticipated
Surveys	Deviation surveys only
Log program	DIL-GR-SP, FDC-CNL-GR-Caliper from 9200' to minimum logging depths

8. Drilling Conditions

a. Anticipated abnormal pressures or temperatures.

i. No abnormal pressures or temperatures or other hazards are anticipated.

ii. Maximum bottom hole pressure equals approximately 1577 psig (pounds per square inch gauge)*

* Max mud wt x 0.052 x TD = A (bottom hole pressure)
9 x 0.052 x 9200 = 4306 psig

** Maximum surface pressure = A – (0.22 x TD)
4306 – (0.22 x 9200) = 2282 psig

b. Hydrogen Sulfide (H2S)

i. H2S has not been an issue on the wells drilled in the immediate area so at this time no H2S monitoring is proposed for the TnT SWD #1

9. Other Information

a. Drilling Schedule

Activity	Date
Location Construction	September 2013
Spud	September 2013
Total Duration	14 days drilling time
	10 days completion time

TnT Environmental Inc. plans to design the disposal facilities once the "completion phase" is completed and estimated volumes of water and max allowable pressures are determined. Since the injection parameters are not known at this time, no decision has been made as to the type, size, or location of any surface facilities. TnT plans to defer submission of the surface facility plan until a later date and agrees to follow the procedures in Section VIII of Onshore Order #1.

The well pad would be constructed with typical construction equipment such as a D6 bulldozer and Cat 140 blade. Construction of the well pad would take approximately 10 days. The proposed well pad would be 300 feet by 250 feet with a 50-foot construction buffer zone around the perimeter of the pad. Construction of the well pad would require between four and eleven foot of cut on the west side of the location, and between one and ten feet of fill on the east side of the location. The construction buffer zone may be used to stockpile topsoil or vegetative material that would be utilized later during reclamation. Cut and fill slopes will be returned to the original contour upon final reclamation. New surface disturbance as a result of well pad construction would be approximately 7.72 acres. To protect livestock and wildlife, the reserve pit will be fenced. Any tanks will be enclosed by a dike.

e. Water Supply:

Water for drilling and completion operations will be hauled by truck from the TnT Landfarm & Water Disposal facility on site.

Please refer to Figure #3.

f. Source of Construction Materials:

No additional construction materials will be required to build this proposed location. Gravel or sandstone material may be hauled in to build up portions of the access road. If needed, sandstone will come from a quarry which is on lease and provided by the land owner.

g. Methods for Handling Waste Disposal:

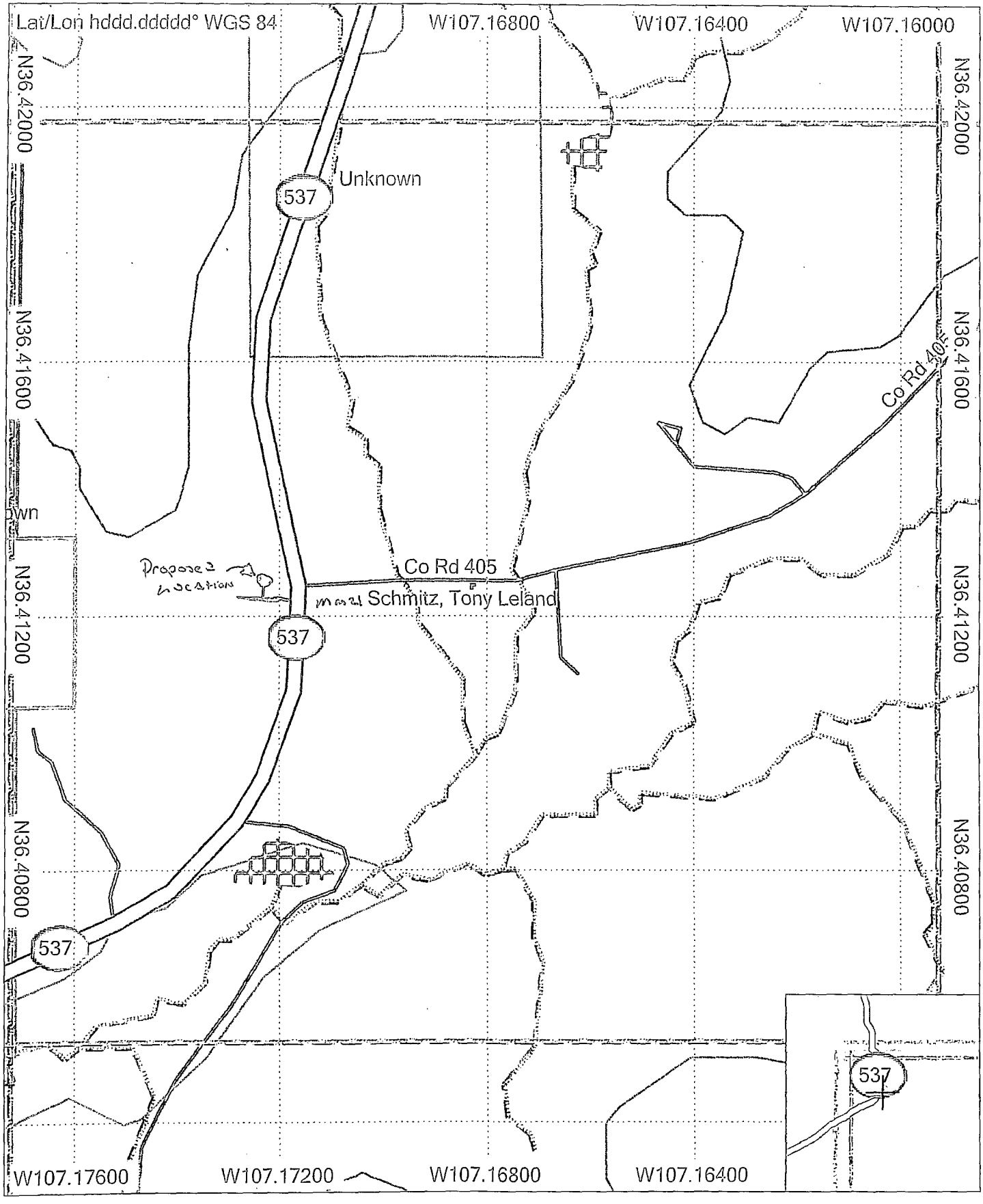
a.) TnT intends to utilize a traditional reserve pit since the well is to be drilled with a "fresh water mud system" so cuttings can be buried onsite as per NMOCD pit guidelines. Once drilling operations have been completed, the reserve pit will be backfilled, leveled and contoured so as to prevent any materials being carried into the watershed. Upon completion, the cuttings pit and cut and fill areas outside of the well pad will be contoured and reseeded with the seed mixture noted in the Revegetation Plan (see Appendix C).

b.) All garbage and trash will be placed in a metal trash basket. It will be hauled off and dumped in an approved land fill upon completion of operations.

c.) Portable toilets will be provided and maintained during drilling operations.

h. Ancillary Facilities:

Ancillary facilities are to be based on the injectivity of the well. (please refer to part d. above). Once the proposed well is completed and proves to be viable, surface injection facilities will be would be constructed on location. No pipeline will be needed.



NM_PLAT4GPS

0 mi 0.1 mi 0.2 mi 0.3 mi 0.4 mi

TN MN 9.7° 1/1/2010

Ahogodero Elk Hunt

GARMIN.

Well Control Equipment Schematic for 2M Service

Attachment to Drilling Technical Program

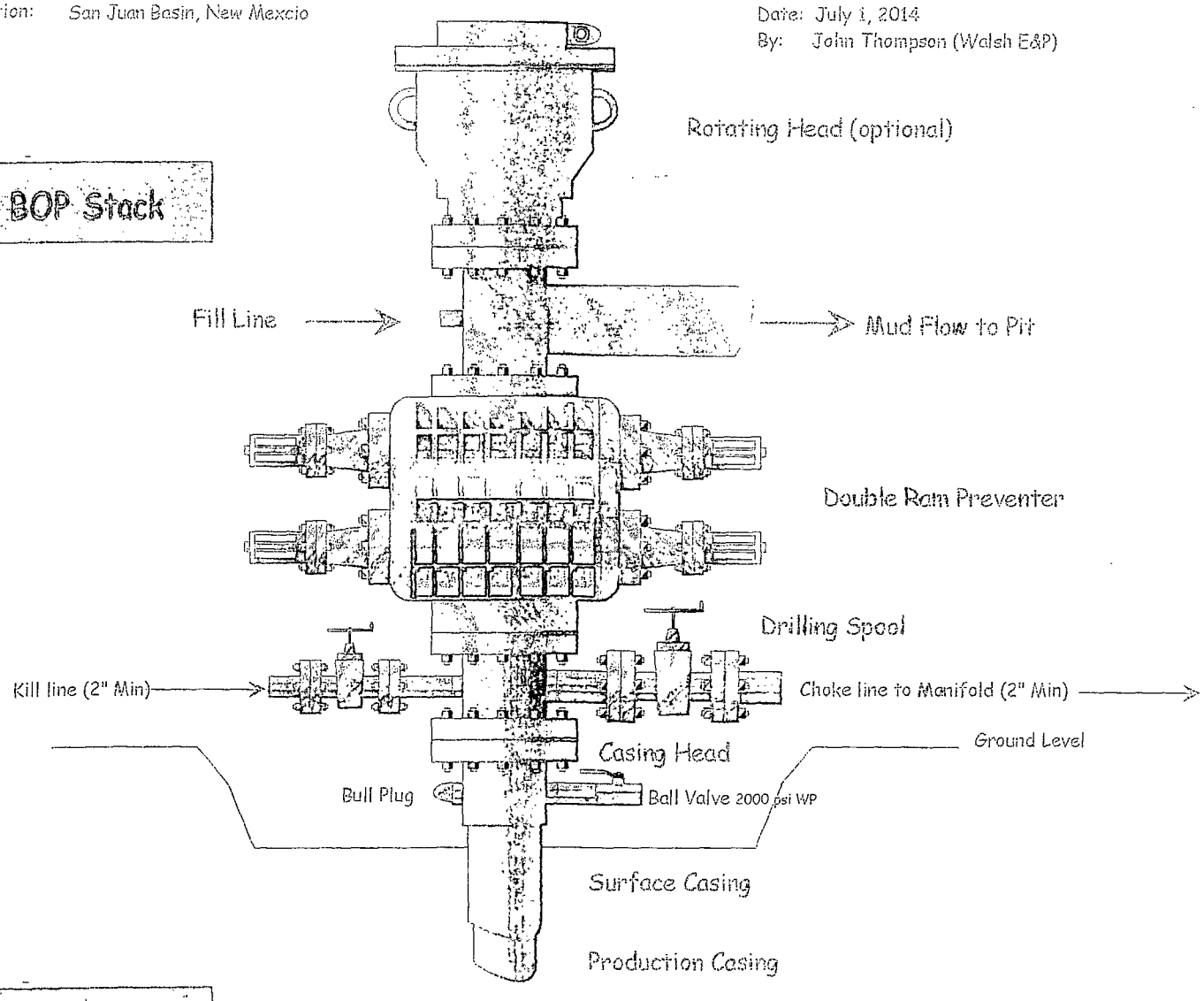
Exhibit #1

Typical BOP setup

Location: San Juan Basin, New Mexcio

Date: July 1, 2014
By: John Thompson (Walsh E&P)

BOP Stack



Choke & Kill Manifold