HISTORY OF OIL OR GAS WELL
(In compliance with rules and regulations pursuant to ORS 520)

(Company or Operator) Northwest Natural Gas Company
(Lease) NW Natural Gas Co
(Well No.) 44-3-65

Sec. 3, Township 6N, Range 5W
Surveyed Coordinates – N 03° 04'39" E 1249.1' N 86° 54.47" W 253.4', SE 1/4 Sec. 3.

Wildcat: Mist Underground Storage
(or) Field Name: Mist Underground Storage
County: Columbia

Signature:

Date:

Position:

Use this form in reporting the daily operations at the well. (Operator may use his own forms, but heading of this form must also be completed and submitted.) Please submit a complete history of the well. Include such information as bit sizes, mud weights, casing sizes and depths set, amount of cement used, drilling depths, fishing, logging, perforating, and plugging procedures, and anything else pertinent to the operation. Do not include lithology.


March 1, 2007 - Rig shut down for modifications and equipment shortage. Back on bottom. After rig modifications, circulate and condition mud. Survey at 158 feet 1 degree. Drill and survey ahead to 373 feet. Lost circulation at 270 feet. Mix mud and LCM. Regained full circulation. Mud weight = 8.6, Viscosity = 64.

March 2, 2007 - Drill 799.3 feet K.B. Circulate hole clean. Trip out to pick up 17.5" hole opener. Hole good no mud loss on trip. Trip in with hole opener. Hole clean to bottom. Open 8.75" hole to 17.5". Opening hole. Mud weight = 8.6, viscosity = 64.

March 3, 2007 - Opening 8.75" hole to 17.5" hole. Repair ball kick out pin. Open hole to 17.5". Move safety chain on top drive. Open hole to 17.5". Restore cushion sub. Open hole to 17.5". Circulate clean hole. Trip out of hole, lay down tools and wait on bit. Mud weight = 8.6, Viscosity = 64.

March 4, 2007 - Hold safety meeting. Wait on bit. Make up BHA and trip in hole to 658 feet. Ream to 784 feet. Bit was inadvertently balled up. Trip out and clean off mud ball. Trip in hole and drill to 794 feet K.B. Circulate and condition hole to run casing. Mud weight = 87., Viscosity = 100.

March 5, 2007 - Circulate and condition hole. Drill to 804.89 feet. Kelly down 17.5 inch hole. Trip out to run casing. Rig up and run 793.37 feet 13 3/8" H-40 48# ST/C 8 RD range 3 casing. Land casing at 790 feet K.B. Circulate casing for two hours. Reduce mud viscosity and yield point with water and thinners. Cement casing with 525 sacks of Class A type III cement mixed at 14.6 lb/gal with 3% gel. Displaced cement with 124 barrels mud. Bumped plug with 900 psi. Held pressure 15 minutes - all OK. Cement in place. Float held. WOC. Mud weight = 87., Viscosity = 100.

March 6, 2007 - Wait on cement. Wait on pipe to do top job. Run in annulus with 1.25" pipe. Tag up solid at 100 feet K.B. Load and mix 105 sacks cement and 300 lbs. gel. Pump 147 cubic feet cement into annulus. Had 1 barrel clean cement to surface. Cement in place. WOC. Cement slowly dropping in annulus to ground level after 2 hours. WOC, will monitor samples.
March 7, 2007 - Safety meeting. Lay down conductor pipe and surface casing. Weld on casing bowl. Heat, weld, cool and test cavity to 1000 psi. Stack BOPE. Nipple up new BOPE. Build new bleed off line and kill line.


March 10, 2007 - Safety meeting. Drill ahead as per directional program. Drill to 3572 feet K.B. - well T.D. 0600 hr. 3/12/07. Circulate and condition mud and hole to wiper trip. Mud weight = 8.7, Viscosity = 73.

March 11, 2007 - Safety meeting. Trip out of hole. Thin mud down from 200 to 80. Trip out and lay down directional tools. Bit is in good shape. String did not show any signs of mud balling. BHA was clean. Tested mud motor. Change out mud motor. Trip in hole with ream and clean as needed. Drill ahead. ROP now back to normal. Mud weight = 8.7, Viscosity = 73.

March 12, 2007 - Safety meeting. Drill ahead as per directional program. Drill to 3672 feet K.B - well T.D. 0600 hr. 3/13/07. Circulate and condition mud and hole for 2.50 hrs. Trip out. Lay down BHA. Safety meeting. Lubricate rig and adjust brakes. Unload and strap casing as needed. Rig in casing tongs.

March 13, 2007 - Safety meeting. Dummy trip to 2700 feet K.B. Had only 77 units gas on bottoms up. Note: Mud weight now at 9.1 lb/gl. Had a volunteer water loss of 8 cc with this mud. Circulate one hour on bottom. Trip out to log. Lay down directional tools and release directional hands. Rig in Halliburton logging service and log well as per company geologist instructions. Mud weight = 9.1, Viscosity = 70.


March 17, 2007 - Safety meeting. Continue to open hole to 12.25” to T.D. Circulate and condition mud and hole for 2.50 hrs. Trip out of hole. Trip good, no tight spots. Lay down BHA. Safety meeting. Lubricate rig and adjust brakes. Unload and strap casing as needed. Rig in casing tongs.


March 23, 2007 - Safety meeting. Run in hole with 7 5/8” repair liner. Very slow running liner through 9 5/8” casing. Had to push liner...
with HWDP. Note: Land liner shoe at 3154 feet K.B. Landed liner with one petal basket in the 8.75" hole and one basket in the 12.25" hole. Circulate liner and hole for 3.75 hr. at 4 barrels per minute. All OK. Pump pressure is normal. Set burn liner hanger and start cement job. Pump 10 bb mud flush. 25 bbis weighted spacer and 129 bbis cement. Mud weight = 9.2, Viscosity = 80.


March 25, 2007 - WOC. Wait on wire line unit to run CBL. Strip drilling mud back. Clean out 7 5/8" liner to 3100 feet KB. Wait on wire line unit. Mud weight = 9.2, Viscosity=80.0

March 26, 2007 - Safety meeting. Strip mud. Wait on wire line unit. Trip out to run CBL log. Run COGCO CBL, VDL, CCL log from 3100 feet K.B. to surface. W.O.O. Evaluate log. Pressure test liner lap to 1000 psi for ten minutes, held ok. Trip in hole to drill out cement. Stop and work on catwalk skate. Continue tripping in hole. Mud weight = 9.2, viscosity 80.0


March 30, 2007 - Safety meeting. Finish in hole with 7 5/8" seal, 9 5/8" packer with seal assembly. Set seal on top of 7 5/8" liner. Used Halliburton pump service to set packer and test back side. All OK. Trip out. Lay down running tools. Rig up to run 7" production tubing. Run in hole with 7" 23 lb. J-55 production casing with 15 foot seal section. Space out to land hanger with 11 feet of seals buried. Test back side to 1000 psi. All OK. Circulate in 100 bbis clean fresh inhibited water. 86 barrels into backside, remainder in tubing. Land hanger and lock down. Test backside and hanger seal to 100 psi. All OK. Install back pressure valve in tubing hanger. Nipple down BOPE and install wellhead.

March 31, 2007 - Finish nipple up production tree. Clean and transfer mud to storage. Clean mud tanks and equipment. Tear out operator rental equipment. Rig release at 1800 hr. 03/30/2007.