

**CONSTANCIA DE ENTREGA DEL EQUIPO DE PERFORACION DE TUNELES  
MECANIZADA PARA LAS OBRAS DE TRASVASE DEL PROYECTO OLMOS POR  
EL FABRICANTE EN PLANTA**

Los que suscriben:

Sr. Lok Home, por The Robbins Company;  
Ing° Erlon Arfelli, por Odebrecht Perú Ingeniería y Construcción S.A.C;  
Ing° Juan Andres Marsano, por Concesionaria Traslase Olmos S.A.;  
Ing° Enrique Salazar Torres, por Proyecto Especial Olmos – Tinajones;  
Ing° Flaviano Solesin, por Coyne et Bellier (Consortio Supervisión Olmos)

Dejan constancia que el día 15 de Septiembre de 2006, en las instalaciones de la fábrica de The Robbins Company ubicada en 3805 C. Henricks Road, Austintown, Ohio, Estados Unidos de América, se procedió a la entrega del equipo de perforación de túneles mecanizado, "Hard Rock Tunnel Boring Machine (TBM)", con código MB 1610-279-4 por el fabricante The Robbins Company a Odebrecht Perú Ingeniería y Construcción S.A.C., quien declara que esta ha sido fabricada de acuerdo con el Expediente Técnico presentado.

El acto que contó con la presencia de los que suscriben la presente.

**Odebrecht Perú Ingeniería y Construcción**

**The Robbins Company**



Ing° Erlon Arfelli



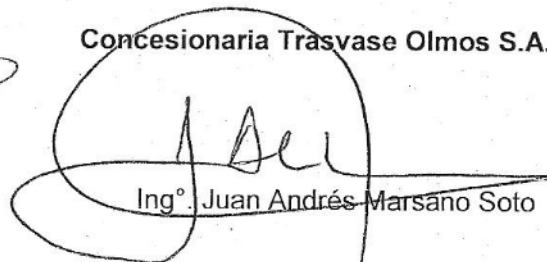
Sr. Lok Holme

**Proyecto Especial Olmos-Tinajones**

**Concesionaria Traslase Olmos S.A.**



Ing° Enrique Salazar Torres



Ing° Juan Andrés Marsano Soto

**Coyne et Bellier (Consortio Supervision Olmos)**



Ing°. Flaviano Solesin

Se adjunta a la presente constancia el documento "Factory Testing Schedule" donde constan las pruebas de aceptación del equipo en fabrica suscrito entre Odebrecht Perú Ingeniería y Construcción S.A.C, The Robbins Company y Coyne et Bellier (Consortio Supervisión Olmos).

# Robbins

TBM & Double Track Backup System  
TBM 1610-279-4  
Olmos Project

September 15, 2006

## Factory Testing Schedule

Testing schedule is as follows:

### 1) TBM

#### a) Cutterhead Rotation /Bridge and TBM Conveyors

1. Start Bridge Conveyor
2. Show bridge conveyor variable speed functions
3. Start TBM conveyor
4. Energize 1 drive motor to rotate cutterhead.
5. Slow cutterhead utilizing variable frequency drive to low speed.
6. Increase vfd to maximum speed.

Completed 15/09/06

#### b) TBM Hydraulic Functions

1. Test roof support functions up and down

Extend roof support cylinders  
Retract roof support cylinders

Completed 15/09/06

2. Test side support extend (wedge) and retract functions

Retract side support cylinders  
Extend wedge cylinders  
Retract wedge cylinders  
Retract side support cylinders

Completed 15/09/06

3. Test gripper system for extend, retract and steering.

Extend grippers  
Retract grippers

Completed 15/09/06

**The Robbins Company**

Locations: Solon, OH • Kent, WA • Oak Hill, WV

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4. Test torque cylinders for vertical steering functions up and down.

Extend torque cylinders  
Retract torque cylinders  
Show TBM roll function

Completed 15/9/06

5. Test propel system for extend and retract.

Extend grippers  
Retract grippers

Completed 15/9/06

6. Test rear section cylinders for extend and retract

Extend rear leg cylinders  
Retract rear leg cylinders

Completed 15/9/06

## 2) L1 Mounted Equipment

- a) Roof Drill Assembly (D100307) – There exists one left hand and one right hand drill assembly. The test procedure is the same for both.

1. Extend axial position cylinder
2. Retract axial position cylinder
3. Activate upper and lower tilt arm cylinders to show maximum drill coverage outboard and inboard..
4. Activate feed positioning cylinder to extend and retract drill motor.

Completed 15/9/06

- b) Probe Drill Assembly (D100308)

1. Activate probe drill traverse cylinder to extend drill ring to maximum forward position.
2. Activate probe drill traverse cylinder to extend drill ring to maximum aft position.
3. Return to mid stroke.

4. Activate hydraulic motor (pc 18) and rotate drill carriage counter clockwise (looking forward) to its maximum position
5. Activate hydraulic motor (pc 18) and rotate drill carriage clockwise to its maximum position.
6. With drill carriage in top/left position extend tilt cylinder (pc10) to achieve maximum upward tilt position of the drill mounting platform
7. With drill carriage in top/left position extend yaw cylinder (pc 9) to achieve maximum side angle position of the drill mounting platform
8. Return drill mounting platform to horizontal position.

Completed 15/9/06

3) **Shotcrete Robot and Conveyor**

a) Shotcrete Robot Functions

1. Run shotcrete conveyor
2. Energize shotcrete robot power pack.
3. Extend shotcrete telescopic arm
4. Show shotcrete arm articulation capabilities by rotating it around the bridge.
5. Retract all arm functions
6. Stow robot arm in neutral position

Completed 15/9/06

The above factory acceptance test was completed in accordance with section VI of Contract Agreement n. 110204-1-MB Revision 4, between the Robbins Company and Odebrecht Peru Ingeieria Y Construcccion S.A.C.

The above test was submitted to the Odebrecht Peru previously and has been accepted as the official factory acceptance test.

It is agreed that the factory acceptance test was completed and witnessed by both parties joined by the above mentioned contract. This signifies completion of requirements for the release of contractual payment referenced in the letter of credit Reference number 155162 and of the contract section VI, chapter 20.

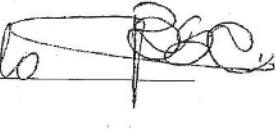


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Odebrecht Peru Ingeieria Y Construcion S.A.C.

Represented by

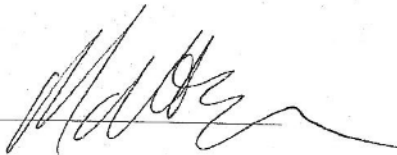
Biaggio Sergio Camello 

Signed this day of

15/09/2006

The Robbins Company

Represented by


M. GLEZOL 

Signed this day of

15/9/2006

Coyne Et Bellier

Represented by

SOLESIA FLAVIANO 

Signed this day of

15/09/2006

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