



ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

LOG OF WELL MW-15

SEE SITE PLAN

ALISTO PROJECT NO: 10-320-06 DATE DRILLED: 07/10-13/97
 CLIENT: Pacific Gas and Electric Co.
 LOCATION: Topock Compressor Station
 DRILLING METHOD: Resonant Sonic, Continuous Coring
 DRILLING COMPANY: Boart Longyear CASING ELEVATION: 84109
 LOGGED BY: Ted Moise/Ken Simas APPROVED BY: Dan Salices

| WELL DIAGRAM | | DEPTH feet | GRAPHIC LOG | SOIL CLASS | GEOLOGIC DESCRIPTION |
|---|----|---------------|-------------|------------|---|
| <p>4" Sch. 80 PVC Casing</p> <p>Cement/Bent Grout</p> | | 0 | | SP | gravelly SAND: pinkish gray; 80% sand, fine grained; 20% gravel, 4-75 mm, subangular; dry. |
| | | 5 | | | |
| | | 10 | | | |
| | | 15 | | GP SP | sandy GRAVEL/gravelly SAND: pale yellowish brown; 50% gravel, 4-70 mm, subangular; 50% sand, fine to coarse grained; dry. |
| | | 20 | | | |
| | 25 | | | SP GP | gravelly SAND: pale yellowish brown; 80% sand, fine to medium grained; 40% gravel, 4-30 mm, subangular; dry. sandy GRAVEL: pale yellowish brown; 80% gravel, 4-80 mm, subangular; 40% sand, fine to medium grained; dry. |
| | 30 | | | | At 27.5 feet, sandy GRAVEL: pale yellowish brown; 70% gravel, 4-80 mm, subangular; 30% sand, fine to medium grained; dry. |
| | | | | | at 34.5 feet, subrounded gravel. |



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 CLIENT: Pacific Gas and Electric Co.
 LOCATION: Topack Compressor Station
 DRILLING METHOD: Resonant Sonic, Continuous Coring
 DRILLING COMPANY: Bort Longyear CASING ELEVATION: 64109
 LOGGED BY: Ted Moise/Ken Simas APPROVED BY: Dan Salaiques

| WELL DIAGRAM | DEPTH feet | GRAPHIC LOG | SOIL CLASS | GEOLOGIC DESCRIPTION |
|---|---------------|-------------|------------|---|
| <p>4" Sch. 80 PVC Casing</p> <p>Cement/Bent Grout</p> | | | GP | Same |
| | 40 | | SP | gravelly SAND: pale yellowish brown; 80% sand, very fine to medium grained; 40% gravel, subrounded, 4-35 mm, some fractured conglomerate gravels; dry. |
| | 45 | | GP | sandy GRAVEL: pale yellowish brown; 80% gravel, subrounded to subangular, 4-150 mm; 40% sand, very fine to medium grained; dry. |
| | 45 | | GP SP | sandy GRAVEL/gravelly SAND: pale yellowish brown; 50% gravel, subrounded, 4-70 mm; 50% sand, very fine to medium grained; dry. |
| | 50 | | SP | gravelly SAND: pale yellowish brown; 70% sand, very fine to medium grained; 30% gravel, subrounded and fractured, 4-75 mm; dry. at 51 feet, 80% sand, very fine to coarse grained; 40% gravel, 4-70 mm, subrounded; dry. |
| | 55 | | GP | |
| | 60 | | GP | |
| | 65 | | GP | at 63 feet, 80% sand, very fine to medium grained; 20% gravel, 4-25 mm, subrounded; dry. |
| | 67.5 | | GP | At 67.5 feet, sandy GRAVEL: pale yellowish brown; 80% gravel, subrounded to angular, some conglomerate gravels, 4-75 mm; 40% sand, very fine to medium grained; dry. |
| | 69 | | SP | At 69 feet, gravelly SAND: pale yellowish brown; 70% sand, very fine to medium grained; 30% gravel, subrounded, 4-30 mm; dry. |

GP



SEE SITE PLAN

ALISTO PROJECT NO: 10-320-08 DATE DRILLED: 07/10-13/97
 CLIENT: Pacific Gas and Electric Co.
 LOCATION: Topack Compressor Station
 DRILLING METHOD: Resonant Sonic, Continuous Coring
 DRILLING COMPANY: Boart Longyear CASING ELEVATION: 64109
 LOGGED BY: Ted Moise/Ken Simas APPROVED BY: Dan Salalces

| WELL DIAGRAM | DEPTH feet | GRAPHIC LOG | SOIL CLASS | GEOLOGIC DESCRIPTION |
|---|---------------|-------------|---|--|
| <p>4" Sch. 80 PVC Casing</p> <p>Cement/Bent Grout</p> | | | GP | sandy GRAVEL: pale yellowish brown; 85% gravel, subrounded and fractured, 4-30 mm; 35% sand, very fine to medium grained; dry. |
| | 75 | | GP SP | sandy GRAVEL/gravelly SAND: pale yellowish brown; 45% gravel, subrounded, 4-40 mm; 5% cobble, subrounded, up to 130 mm; 50% sand, very fine to medium grained; dry. |
| | | | SP | gravelly SAND: pale yellowish brown; 80% sand, very fine to medium grained; 40% gravel, subrounded, 4-20 mm; dry. COBBLES with sand: 30% sand, very fine to fine grained; 70% cobbles, fractured and subrounded, to 150 mm. |
| | 80 | | SP | gravelly SAND: pale yellowish brown; 80% sand, very fine to medium grained; 40% gravel, 4-40 mm, subrounded and fractured gravel; dry. |
| | | | | COBBLES with sand: 30% sand, very fine to fine grained; 70% cobbles, fractured and subrounded, to 150 mm. |
| | 85 | | SP | gravelly SAND: pale yellowish brown; 80% sand, very fine to medium grained; 40% gravel, 4-40 mm, subrounded and fractured gravel; dry. |
| | | | | COBBLES with sand: 30% sand, very fine to fine grained; 70% cobbles, fractured and subrounded, to 150 mm. |
| | | | SP | gravelly SAND: pale yellowish brown; 80% sand, very fine to medium grained; 40% gravel, 4-40 mm, subrounded; dry. |
| | 90 | | GP SP | COBBLES with sand: 30% sand, very fine to fine grained; 70% cobbles, fractured and subrounded, to 150 mm. |
| | | | | sandy GRAVEL/gravelly SAND: pale yellowish brown; 50% sand, very fine to medium grained; 50% gravel, subrounded, 4-70 mm. |
| | 95 | | SP | gravelly SAND: pale yellowish brown; 70% sand, very fine to medium grained; 30% gravel, 4-30 mm, subrounded; dry. |
| | | | GP | sandy GRAVEL: pale yellowish brown; 80% gravel, 4-75 mm, subrounded and fractured gravels; 40% sand, fine to medium grained; dry. |
| 100 | | SP | gravelly SAND: pale yellowish brown; 85% sand, very fine to medium grained; 35% gravel, 4-30 mm, subrounded; dry. | |
| | | | At 101 feet, 80% sand, 40% gravel. | |



SEE SITE PLAN

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 LOCATION: Topack Compressor Station
 DRILLING METHOD: Resonant Sonic, Continuous Coring
 DRILLING COMPANY: Boart Longyear CASING ELEVATION: 64109
 LOGGED BY: Ted Moise/Ken Simas APPROVED BY: Dan Salices

| WELL DIAGRAM | DEPTH feet | GRAPHIC LOG | SOIL CLASS | GEOLOGIC DESCRIPTION |
|---|---------------|-------------|---|---|
| <p>4" Sch. 80 PVC Casing</p> <p>Cement/Bent Grout</p> | | | SP | Same |
| | | | GP | sandy GRAVELS: 80% gravel, 4-75 mm, fractured gravels; 40% sand, very fine to fine sand; dry. |
| | 110 | | SP | gravelly SAND: pale yellowish brown; 80% sand, fine to coarse grained; 20% gravel, 4-40 mm, subrounded; dry. |
| | 115 | | | |
| | | | SP | Rock fragments with very fine to fine sand. gravelly SAND: pale yellowish brown; 85% sand, fine to coarse grained; 35% gravel, 4-30 mm, subrounded; dry. |
| | 120 | | | At 120 feet, 75% sand; 25% gravel, 4-20 mm. At 121 and 123.5 feet, 100 mm cobbles. |
| | 125 | | | |
| | | | GP | sandy GRAVELS: 80% gravel, 4-70 mm, subrounded and fractured gravel; 40% sand, very fine to medium grained; dry. |
| | | SP | gravelly SAND: pale yellowish brown; 80% sand, very fine to medium grained; 20% gravel, 4-30 mm, subrounded; dry. At 133 feet, 85% sand, 35% gravel. At 134 feet, 75% sand, 25% gravel. | |
| | 135 | | | |



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ALISTO PROJECT NO: 10-320-08 DATE DRILLED: 07/10-13/97
 CLIENT: Pacific Gas and Electric Co.
 LOCATION: Topack Compressor Station
 DRILLING METHOD: Resonant Sonic, Continuous Coring
 DRILLING COMPANY: Bort Longyear CASING ELEVATION: 84109
 LOGGED BY: Ted Moise/Ken Simas APPROVED BY: Dan Salaiques

| WELL DIAGRAM | DEPTH feet | GRAPHIC LOG | SOIL CLASS | GEOLOGIC DESCRIPTION |
|--|---|-------------|---------------------|---|
| <p>4" Sch. 80 PVC Casing</p> <p>Cement/Bent Grout</p> <p>Bentonite</p> | <p>45</p> <p>50</p> <p>55</p> <p>60</p> <p>65</p> <p>70</p> | | <p>SP</p> <p>GP</p> | <p>At 147 feet, 70% sand, 30% gravel, 4-40 mm.</p> <p>At 154 feet, 80% sand, fine to coarse grained; 40% gravel, 4-80 mm, subangular; dry.</p> <p>At 182 feet, light gray; 70% sand; 30% gravel, 4-75 mm.</p> <p>sandy GRAVEL: light gray; 70% gravel, 4-80 mm; 30% sand, fine to coarse grained.</p> <p>At 174.5 feet; 85% gravel; 35% sand.</p> |



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 CLIENT: Pacific Gas and Electric Co.
 LOCATION: Topock Compressor Station
 DRILLING METHOD: Resonant Sonic, Continuous Coring
 DRILLING COMPANY: Boart Longyear CASING ELEVATION: 841.09
 LOGGED BY: Ted Malse/Ken Simas APPROVED BY: Dan Salices

| WELL DIAGRAM | DEPTH feet | GRAPHIC LOG | SOIL CLASS | GEOLOGIC DESCRIPTION |
|--------------|---------------|-------------|------------|--|
| | 80 | GP | | Same At 180 feet, damp to moist. |
| | 185 | SP | | gravelly SAND: olive gray; 55% sand, fine to medium grained; 30% gravel, subangular, 4-30 mm; 15% fines; damp to moist. At 184 feet, 70% sand, fine to coarse grained; 30% gravel, subangular, 4-25 mm; wet. At 185 feet, 80% sand, fine to medium grained; 30% gravel, subangular, 4-30 mm; 10% fines; wet. At 188 feet, 80% sand, fine to coarse grained; 20% gravel, subangular, 4-30 mm; wet. |
| | 90 | SM | | gravelly silty SAND: brownish gray; 80% sand, fine to coarse grained; 25% gravel, subangular, 4-80 mm; 15% fines; wet. |
| | 195 | SP | | gravelly SAND: brownish gray; 75% sand, fine to coarse grained; 25% gravel, subangular, 4-80 mm, wet. |
| | 200 | SM | | gravelly silty SAND: brownish gray; 80% sand, fine to coarse grained; 25% gravel, subangular, 4-80 mm; 15% fines; wet. |
| | 205 | | | Total depth of borehole is 204 feet. |