

STATE OF CALIFORNIA
WELL COMPLETION REPORT

Refer to Instruction Pamphlet

Page 1 of 1

Owner's Well No. 107 Prod Well (Fresno Slough W.D.-B.O.R.)

No. e0132267

Date Work Began 7/24/11 Ended 8/16/11

Local Permit Agency Fresno County-Dept Community Health, Env Health Div

Permit No. WP0030686 Permit Date 6/15/11

14516E30 1/12

DWR USE ONLY - DO NOT FILL IN

STATE WELL NO./STATION NO.

LATITUDE LONGITUDE

APN/TRS/OTHER

GEOLOGIC LOG

WELL OWNER

ORIENTATION (X) ☒ VERTICAL ☐ HORIZONTAL ☐ ANGLE ☐ (SPECIFY)

DRILLING METHOD Reverse Rotary FLUID

DESCRIPTION

Describe material, grain size, color, etc.

DEPTH FROM SURFACE

FL to Ft.

0	40	Fine sand
40	50	Fine sand, trace of clay
50	260	Fine sand
260	430	Sand
430	440	Sand & Gravel
440	520	Fine sand
520	530	Sand, trace of clay
530	560	Sand & Clay
560	570	Sand
570	600	Sand & some clay
600	630	Fine sand
630	650	Sand & Clay
650	690	Fine sand
690	710	Clay
710	740	Fine sand
740	760	Coarse Sand
760	780	Fine sand, silty brown sand
780	830	Silty clay, fine sand

Address .6 miles West of Jefferson Ave 1.5 miles North

City Tranquillity Ca 93668

County Fresno County STATE ZIP

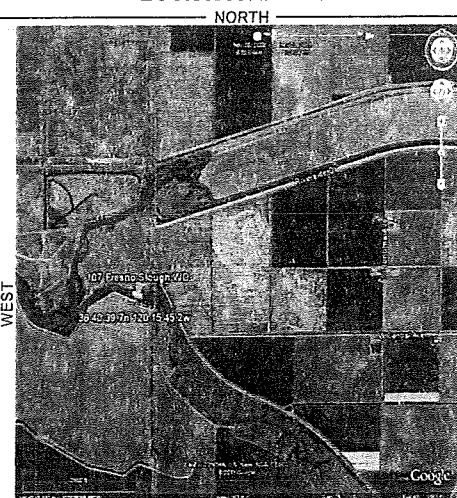
APN Book 015 Page 140 Parcel 57S

Township 14S Range 16E Section 30

Latitude 36 40 39.7 NORTH Longitude 120 15 45.2 WEST

DEG. MIN. SEC. DEG. MIN. SEC.

LOCATION SKETCH



ACTIVITY (X)

☒ NEW WELL
MODIFICATION/REPAIR

☐ Deepen

☐ Other (Specify)

☐ DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (X)

WATER SUPPLY

☒ Domestic ☐ Public

☒ Irrigation ☐ Industrial

MONITORING ☐

TEST WELL ☐

CATHODIC PROTECTION ☐

HEAT EXCHANGE ☐

DIRECT PUSH ☐

INJECTION ☐

VAPOR EXTRACTION ☐

SPARGING ☐

REMEDIATION - OTHER (SPECIFY) ☐

Illustrate or Describe Distance of Well from Roads Buildings, Fences, Rivers etc and attach map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER Unknown (Ft.) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL 120 (Ft.) & DATE MEASURED 8/12/11-8/14/11

ESTIMATED YIELD 2,101 (GPM) & TEST TYPE Development, Step, Constant

TEST LENGTH 31 (Hrs.) TOTAL DRAWDOWN 136.8 (Ft.)

* May not be representative of a well's long-term yield.

TOTAL DEPTH OF BORING 830 (Feet)

TOTAL DEPTH OF COMPLETED WELL 810 (Feet)

DEPTH FROM SURFACE			BORE-HOLE DIA. (Inches)	CASING (S)					DEPTH FROM SURFACE	ANNULAR MATERIAL						
				TYPE (-)				MATERIAL / GRADE		OUTSIDE DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)	TYPE			
				BLANK	SCREEN	CON- DUCTOR	FILL PIPE						CE- MENT	BEN- TONITE	FILL	FILTER PACK (TYPE/SIZE)
Fl.	to	Fl.								Fl.	to	Fl.	(X)	(X)	(X)	
0		50	42			X		LCS	30	.312			X			11 sack sand slurry
0		580	26	X				LCS	16	.250					X	SRI #8
580		780	26		X			HSLA Louver	16	.250						
780		810	26	X				LCS-Sump	16	.250						

ATTACHMENTS (X)

☐ Geologic Log

☒ Well Construction Diagram

☐ Geophysical Log(s)

☒ Soil/Water Chemical Analyses

☒ Other Test Pump Data

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

1, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

Layne Christensen Company

NAME (PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

11001 Etiwanda Ave

Fontana

Ca

92337

ADDRESS

CITY

STATE

510011

Signed

WELL DRILLER/AUTHORIZED REPRESENTATIVE

DATE SIGNED 10/5/11

C-57 LICENSE NUMBER



DEPARTMENT OF PUBLIC HEALTH, ENVIRONMENTAL HEALTH DIVISION
P.O. Box 11867, Fresno, California 93775-1867 Tel: (559) 445-3357 FAX: (559) 445-3301

Website: www.fcdph.org

PERMIT TO CONSTRUCT, DEEPEN, DESTROY, RECONDITION, OR REPAIR A WELL

Note: This permit is non-transferable and is valid for 180 days

PERMIT NUMBER: WP00-30686

6-14-11 6-20-11
Application Date Estimated Starting Date
T: 145 R: 16E S: 30
AFN: 015 1140 1575
Job Address / Location: 6 miles West of Jefferson Ave 1.5 miles N

OFFICE USE ONLY
Specialist: Vacant CT: 92 FA#: 0270656 WP#: 0030686
Well Location In Designated Flood Zone. Extend casing above known flood level.
Depth To Corcoran Clay (special annular seal requirements apply) 500

Contractor Name: Layne Christensen Co License #: 510011 Phone: 562-255-5817

TYPE OF WORK ☒ New Well ☐ Replacement Well ☐ Reconstruction/Deepening ☐ Test Hole Only ☐ Destruction

INTENDED USE ☐ Domestic Private ☒ Agricultural ☐ Industrial ☐ Cathodic ☐ Monitoring
☐ Domestic Public System Name: ☐ Other

WELL CONSTRUCTION ☐ Casing Driven ☐ Cable Tool ☐ Hardrock ☐ Auger ☐ Direct Rotary ☒ Reverse Rotary
Conductor Casing Material: AS3P Steel Diameter: 30" In Depth: 50' Ft Borehole Diameter: 42" In
Well Casing Material: AS3P Steel Diameter: 16" In Gauge: 250 Borehole Diameter: 26" In
Annular Seal Depth: 50' Ft ☐ Neat Cement ☒ Sand Cement ☐ Concrete
☐ Bentonite - Manufacturer and Product Name ☐ Mixed With Water ☐ Dry Application
Seal Placement Method ☒ Pumped ☐ Free Fall (allowed only when the interval to be sealed is dry and less than 30 feet in depth)

WELL DESTRUCTION ☐ Open Bottom ☐ Gravel Packed ☐ Uncased ☐ Other
Diameter In Total Depth Ft Depth To Water Ft ☐ Casing To Be Perforated Ft To Ft
Destruction Seal ☐ Neat Cement ☐ Sand Cement ☐ Concrete Fill Material Below Seal
☐ Bentonite - Manufacturer and Product Name ☐ Mixed With Water ☐ Dry Application
☐ Seal Interval Feet Below Grade To Top Of Casing ☐ Seal Bottom Of Well To Top Of Casing
☐ Casing Cut Off Feet Below Grade (6 feet maximum allowed)
Seal Placement Method ☐ Pumped ☐ Free Fall (allowed only when the interval to be sealed is dry and less than 30 feet in depth)
☐ Oil-lubricated pump. Any oil in the well will be removed and properly disposed of prior to destruction.

SETBACKS (in feet) ☒ All Setbacks Exceed 300 Feet Other Wells Leach Lines Septic Tank
Cesspool Seepage Pits Sewer Lines Designated Sewage Replacement Area
Animal/Fowl Enclosure Flood Control Basins Waste Water Disposal Ponds Lakes, Streams

SPECIAL SUBDIVISION, TRACT RESTRICTIONS Tract Name, Number
☐ Setbacks (specify type, e.g. well-to-well, etc. and required distance)
☐ Designated Engineered Sewage Disposal Areas (enclose tract map showing designated areas on each parcel)

FEE ☒ \$605 (Domestic, Agricultural, Cathodic, Industrial) ☐ \$407 (Well Destruction) ☐ No Charge (Monitoring Wells)

PAYMENT METHOD ☐ Cash ☒ Check ☐ Credit Card
*Authorization on file with Fresno County Department of Public Health, Environmental Health Division

I hereby certify that the information described herein is correct. I understand that all work is to be done in accordance with the California Well Standards Ordinance and the conditions of this permit application, including any conditions which are added by the Environmental Health Division upon review of this application and issuance of the permit. I certify that I have a current C-57 Contractor's License and, if I employ workers, a current certificate of Workers' Compensation Insurance. I further understand that any permit issued pursuant to this application is subject to such further conditions as may be deemed necessary to ensure compliance with the Ordinance.

CONTRACTOR SIGNATURE: [Signature] DATE: 6-14-11

OFFICE USE ONLY

Approved: Date: Final Inspection: Date:
Complete: Date: Incomplete: Date:
Supervisor:

Envision Clerical Use

4050

Account # PE
Entered By Date

Revision 12/10/08

Reg/Rcpt#: 005-00008564 FERNANDEZ
Accounting Date: 06-14-2011
Receipt Total = \$605.00
Com: 1 PERMIT - CHECK #5065913

TID 107



County of Fresno

DEPARTMENT OF PUBLIC HEALTH

EDWARD L. MORENO, M.D., M.P.H.
DIRECTOR-HEALTH OFFICERSPECIAL SEALING REQUIREMENTS FOR WELLS LOCATED IN AREAS OF
CORCORAN CLAY WITHIN FRESNO COUNTYDrilling Contractor Lagac - Christensen CoLocation Jefferson AveWP# 00306F6 APN 015-140-57

The well location for this permit has been determined to be within an area where special sealing requirements exist. Fresno County Ordinance Code 14.08.060. "Sealing-off strata" requires special sealing procedures if the well penetrates more than one aquifer separated by Corcoran Clay. The Corcoran Clay in the area where this well is located is estimated by the Water Resources Control Board to be located at 500 ft deep.

Bulletin No. 74-6, Water Well Standards-Fresno County was written by the California Department of Water Resources. This Bulletin describes the various geological conditions where water is found in Fresno County and ways to prevent water contamination. The Bulletin divides the county into four areas, Area III or the Valley Trough runs north to south along the west side of Fresno County, east of the coast range and west of the city of Fresno. Within this area is a layer of confining clay called Corcoran Clay that separates the water aquifers and keeps their water quality different. The upper aquifer in this area has more salts and minerals than the water below the Corcoran Clay. Water with high salts and minerals can be detrimental to crops and undesirable to drink. It is a benefit to the citizens of the county to keep the two aquifers separated and maintain the better water quality found in the lower aquifer.

Within Area III are three water bearing aquifers; (1) a confined aquifer below the Corcoran Clay, (2) an unconfined aquifer above the Corcoran Clay and (3) a perched aquifer near the ground surface. Wells constructed in these areas have special sealing requirements that are intended to preclude the water in these aquifers from mixing (Bulletin 74-6, Water Well Standards Fresno County).

Fresno County Ordinance Code Title 14 Section 14.08.060 in part reads:
"In areas where a well penetrates more than one water bearing stratum and any of the stratum contains water of a quality such that, if allowed to mix with water of another stratum, will in the judgment of the Health Officer result in a significant deterioration, the

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TIV 107

stratum producing such inferior water shall be sealed off to prevent entrance of the water into the well or its vertical migration to other Strata.

- A. The undesirable water bearing stratum shall be sealed off by placing impervious material opposite the stratum and opposite the confining bed for a sufficient vertical distance (but not less than 10 ft) in either direction to prevent the vertical movement of water from the producing formation. Sufficient sealing material shall be applied to fill the annular space between the casing and the wall of the drilled hole in the interval to be sealed, and to fill the voids which might absorb the selling material.
- B. Sealing material shall consist of neat cement, cement grout, or other suitable impervious material (Section 14.08.160-E-1).
- C. Sealing shall be accomplished by a method approved by the health officer.
- D. In areas of Fresno County underlain by Corcoran Clay, wells which extend through this clay shall not be perforated both above and below the clay except in the following instances:
 1. Where the Corcoran Clay is less than twenty feet in thickness;
 2. In areas where the difference in water quality above and below the clay is approximately seven hundred micromhos (five hundred ppm TDS) or less;
 3. In the area east of the Fresno Slough and south of the Murphy Slough."

Perched Water

Fresno County Ordinance Code Section 14.08.060 G

"G. Wells which penetrate perched waters shall meet the following requirements:

1. Perched waters, including those retained on the A Clay, shall be excluded from all wells except when the well is drilled expressly for the extraction of perched waters for ground water level control, or water quality control, or where it can be demonstrated that the transfer of such water will not in the judgment of the Health Officer cause a significant deterioration of the quality of water in underlying water strata.
2. Wells drilled for extraction of perched waters for ground water level control or for water quality control shall not penetrate any usable ground water body lying below the perched water.
3. In rotary type wells penetrating the A Clay, a positive seal at least twenty feet or at least the thickness of the A Clay shall be provided in the annular space of each well."

Water Well Contractors drilling wells within Area III where the Corcoran Clay is located are required to follow the sealing requirements listed above to ensure that the well is constructed in such a way that both aquifers in this area do not mix.

If you have any questions please contact Fresno County Environmental Health Division at (559) 445-3357.

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5/12

"Professional Services for Water Systems"

No Scale



Customer B.O.R. _____ Date 8/12/2011 Job Number 1000-2529

Well Diameter 18" Depth of Well 840' Static Water Level 126' Well # & Name # 107

Pump Setting 482' Airline Depth 480' Flowmeter Start: 4657500 End 4773300

How Q Measured 8" GAL X 100 How W.L.s Measured ELECTRIC/AIR Test Type Development ☒ StepDraw-Down ☐

Total Hours This Sheet 6 Person Conducting Well Test B. PORTER & C. SEIPEL Production ☐

Time	PPM Sand	Flow GPM	Draw Down	Pumping Level	Specific Capacity	Engine RPM	Comments
11:30							start very very muddy
12:00		600	81.4'	207.4'	7.37	1090	very very muddy
12:30	400	600	70.4'	196.4'	8.52	1090	very very muddy
12:40							start after 3 surges very very muddy
13:00	200	800	104.5'	230.5'	7.65	1220	muddy
13:10							\start after 4 surges very muddy
13:30	175	900	81.4'	207.4'	11.05	1380	muddy
13:40							start after 5 surges very very muddy
14:00	125	1345	123.0'	249.0'	10.93	1590	muddy
14:05							start after 5 surges very muddy
14:20	50	350	39.8'	165.8'	8.79	1050	e.c. 1194 t.d.s. 607
14:28							start after 2 surges very cloudy
14:43	40	1350	104.5'	230.5'	12.91	1530	very cloudy e.c. 1220 t.d.s. 610
15:00							start after 3 surges muddy
15:20	25	1450	111.4'	237.4'	13.01	1568	cloudy e.c. 1230 t.d.s. 610
16:25							start after 3 surges light muddy
16:45	40	1750	123.0'	249.0'	14.22	1650	light muddy e.c. 1240 t.d.s. 610
16:55							start after 4 surges slightly muddy

14S16E30

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Customer	B.O.R.	Date	8/12/2011	Job Number	1000-2529
Well Diameter	18"	Depth of Well	840'	Static Water Level	126'
				Well # & Name	#107
Pump Setting	482'	Airline Depth	480'	Flowmeter	Start: 4657500
				End	4773300
How Q Measured	8" GAL X 100	How W.L.s Measured	ELECTRIC/AIR	Test Type	Development
					☒ Step-Down ☐ Draw-Down
Total Hours This Sheet	1	Person Conducting Well Test	B. PORTER & C. SEIPEL		
					Production

[illegible]

14S16E30

7/12



Customer B.O.R. Date 8/13/2011 Job Number 1000-2529

Well Diameter 16" Depth of Well 840' Static Water Level 120' Well # & Name # 107

Pump Setting 480' Airline Depth 480' Flowmeter Start: 4773300 End 4594600

How Q Measured 8" GAL X 100 How W.L.s Measured ELECTRIC/AIR Test Type Development ☒ StepDraw-Down ☐

Total Hours This Sheet 6 Person Conducting Well Test B. PORTER & C. SEIPEL Production ☐

Time	PPM Sand	Flow GPM	Draw Down	Pumping Level	Specific Capacity	Engine RPM	Comments
6:30							start surging while static is recovered
7:00							start at low flo
7:30	100	1000	62.0'	182.0'	16.12	1303	very cloudy
8:10							start after 10 slow surges very muddy
8:25	50	1390	80.4'	200.4'	17.28	1609	light muddy e.c. 1240 t.d.s.620
8:37							start after 8 surges very muddy
8:50	20	1801	110.9'	230.9'	16.23	1616	very cloudy e.c. 1240 t.d.s. 620
9:06							start after 4 surges light muddy
9:21	25	2150	129.0'	249.0'	16.66	1734	very cloudy e.c. 1245 t.d.s. 625
9:35							start after 5 surges clear
9:57	trace	540	37.7'	157.7'	14.32	1105	clear dewatered at hight flo e.c. 1227 t.d.s. 616
10:10							start after 5 surges light mud
10:25	25	2250	129.9'	249.9'	17.32	1760	very cloudy
10:38							start after 5 surges light muddy
10:58	40	2307	142.8'	262.8'	16.15	1810	slightly cloudy e.c. 1240 t.d.s. 620
11:10							start after 5 surges light muddy 3 min then clearing
11:30	25	2490	160.6'	280.6'	15.5	1875	cloudy prepair for step test surging well
12:30							surge well for 55 min

14S16E30

8/12



Customer B.O.R. Date 8/13/2011 Job Number 1000-2529

Well Diameter 16" Depth of Well 840' Static Water Level 120' Well # & Name # 107

Pump Setting 480' Airline Depth 480' Flowmeter Start: 4954600 End 5353100

How Q Measured 8" GAL X 100 How W.L.s Measured ELECTRIC/AIR Test Type Development ☒ Step Draw-Down ☒

Total Hours This Sheet 5 Person Conducting Well Test B. PORTER & C. SEIPEL Production ☐

Time	PPM Sand	Flow GPM	Draw Down	Pumping Level	Specific Capacity	Engine RPM	Comments
12:30						1530	START STEP TEST # 1 ADJ Q 3 min cloudy
12:40	6.9	1550	80.4'	200.4'	19.27	1465	INC Q 1480 RPM clear
12:50	0.5	1500	85.1'	205.1'	17.62	1481	clear
13:00	-	1480	87.4'	207.4'	16.93	1483	INC Q clear
13:15	-	1500	87.6'	207.6'	17.12	1493	clear ADJ Q
13:30	-	1508	89.7'	209.7'	16.81	1502	clear
14:00	0.08	1500	90.1'	210.1'	16.64	1503	clear
14:30	-	1500	90.4'	210.4'	16.59	1503	clear e.c. 1234 t.d.s. 619
14:30						1617	START STEP TEST # 2 cloudy 3 min
14:40	1.1	1812	110.5'	230.5'	16.93	1617	clear
14:50	1.1	1820	110.9'	230.9'	16.41	1619	clear
15:00	1.1	1825	111.0'	231.0'	16.44	1619	clear
15:15	1.1	1823	111.2'	231.2'	16.39	1619	clear
15:36	1.1	1820	111.4'	231.4'	16.33	1619	clear
16:00	1.1	1818	111.6'	231.6'	16.29	1619	clear e.c. 1240 t.d.s. 620
16:30	1.1	1816	111.7'	231.7'	16.25	1619	clear
17:00 to 17:30						shut down	well was developing during step test surge 1 hr. after test

14S16E30

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Customer B.O.R. Date 8/14/2011 Job Number 1000-2529
 Well Diameter 16" Depth of Well 840' Static Water Level 120' Well # & Name # 107
 Pump Setting 480' Airline Depth 480' Flowmeter Start: 5360200 End: 5611400
 How Q Measured 8" GAL X 100 How W.L.s Measured ELECTRIC/AIR Test Type Development ☒ Step Draw-Down ☒
 Total Hours This Sheet 3 Person Conducting Well Test B. PORTER & C. SEIPEL Production ☐

Time	PPM Sand	Flow GPM	Draw Down	Pumping Level	Specific Capacity	Engine RPM	Comments
7:00							WORK WELL SURGE 20 TIMES WELL NEEDED TO BE
8:00							SURGED. BROKE DOWN DURING STEP #2
8:00							START STEP # 3 cloudy
8:10	5.3	2100	110.5'	230.5'	19	1659	clear INC Q
8:20	-	2045	117.4'	237.4'	17.41	1669	INC Q clear
8:30	2.4	2065	118.6'	238.6'	17.41	1684	INC Q clear
8:45	0.33	2090	122.0'	242.0'	17.13	1700	INC Q clear
9:01	0.35	2092	126.6'	246.6'	16.52	1710	INC Q clear
9:15	0.75	2116	127.8'	247.8'	16.55	1720	clear
9:30	-	2114	128.5'	248.5'	16.45	1720	clear
10:00	0.35	2102	129.2'	249.2'	16.26	1720	clear
							AVG FLO 2094
							E.C.1220 T.D.S. 612 TEMP 75 F

14816E80

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Customer B.O.R. Date 8/14/2011 Job Number 1000-2529

Well Diameter 16" Depth of Well 840' Static Water Level 120' Well # & Name # 107

Pump Setting 480' Airline Depth 480' Flowmeter Start: 5611400 End 6620850

How Q Measured 8" GAL X 100 How W.L.s Measured ELECTRIC/AIR Test Type Development ☐ StepDraw-Down ☐

Total Hours This Sheet 9 Person Conducting Well Test B. PORTER & C. SEIPEL Production ☒

Time	PPM Sand	Flow GPM	Draw Down	Pumping Level	Specific Capacity	Engine RPM	Comments
8:00							START CONSTANT cloudy
8:10	5.3	2100	110.5'	230.5'	19	1659	clear INC Q
8:20	-	2045	117.4'	237.4'	17.41	1669	INC Q clear
8:30	2.4	2065	118.6'	238.6'	17.41	1684	INC Q clear
8:45	0.33	2090	122.0'	242.0'	17.13	1700	INC Q clear
9:01	0.35	2092	126.6'	246.6'	16.52	1710	INC Q clear
9:15	0.75	2116	127.8'	247.8'	16.55	1720	clear
9:30	-	2114	128.5'	248.5'	16.45	1720	clear
10:00	0.35	2102	129.2'	249.2'	16.26	1720	clear
10:30	-	2093	130.1'	250.1'	16.08	1722	clear
11:00	-	2112	132.4'	252.4'	15.95	1730	INC Q clear
11:30	-	2107	134.0'	254.0'	15.72	1731	clear
12:00	-	2100	134.0'	254.0'	15.67	1731	clear
13:00	0.05	2095	135.9'	254.0'	15.63	1731	clear
14:02	-	2111	136.3'	255.9'	15.53	1740	INC Q clear
15:00	0.2	2105	136.8'	256.3'	15.44	1743	clear
16:00	0.17	2106	136.8'	256.8'	15.38	1745	clear
17:00	0.17	2105	136.8'	256.8'	15.38	1745	clear

14S16E30

11/12



Customer	B.O.R.	Date	mm	Job Number	1000-2529
Well Diameter	16"	Depth of Well	840'	Static Water Level	120'
Pump Setting	480'	Airline Depth	480'	Flowmeter	Start: 5360200 End: 6620850
How Q Measured	8" GAL X 100	How W.L.s Measured	ELECTRIC/AIR	Test Type	Development ☐ StepDraw-Down ☐
Total Hours This Sheet	1	Person Conducting Well Test	B. PORTER & C. SEIPEL		
					Production ☒

[illegible]

14S16E80

12/12