

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well REI H09-24D
Project:	SEC.9-T3N-R65W	TVD Reference:	WELL @ 4842.0ft (Original Well Elev)
Reference Site:	REI H09-31D Pad Sec.9-T3N-R65W	MD Reference:	WELL @ 4842.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	REI H09-24D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Noble REI H09-24D Plan #2 (1-12-12)	Offset TVD Reference:	Offset Datum

Reference	Noble REI H09-24D Plan #2 (1-12-1)		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date 1/12/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	8,350.3	Noble REI H09-24D Plan #2 (1-12-12) (W)	MWD	MWD - Standard

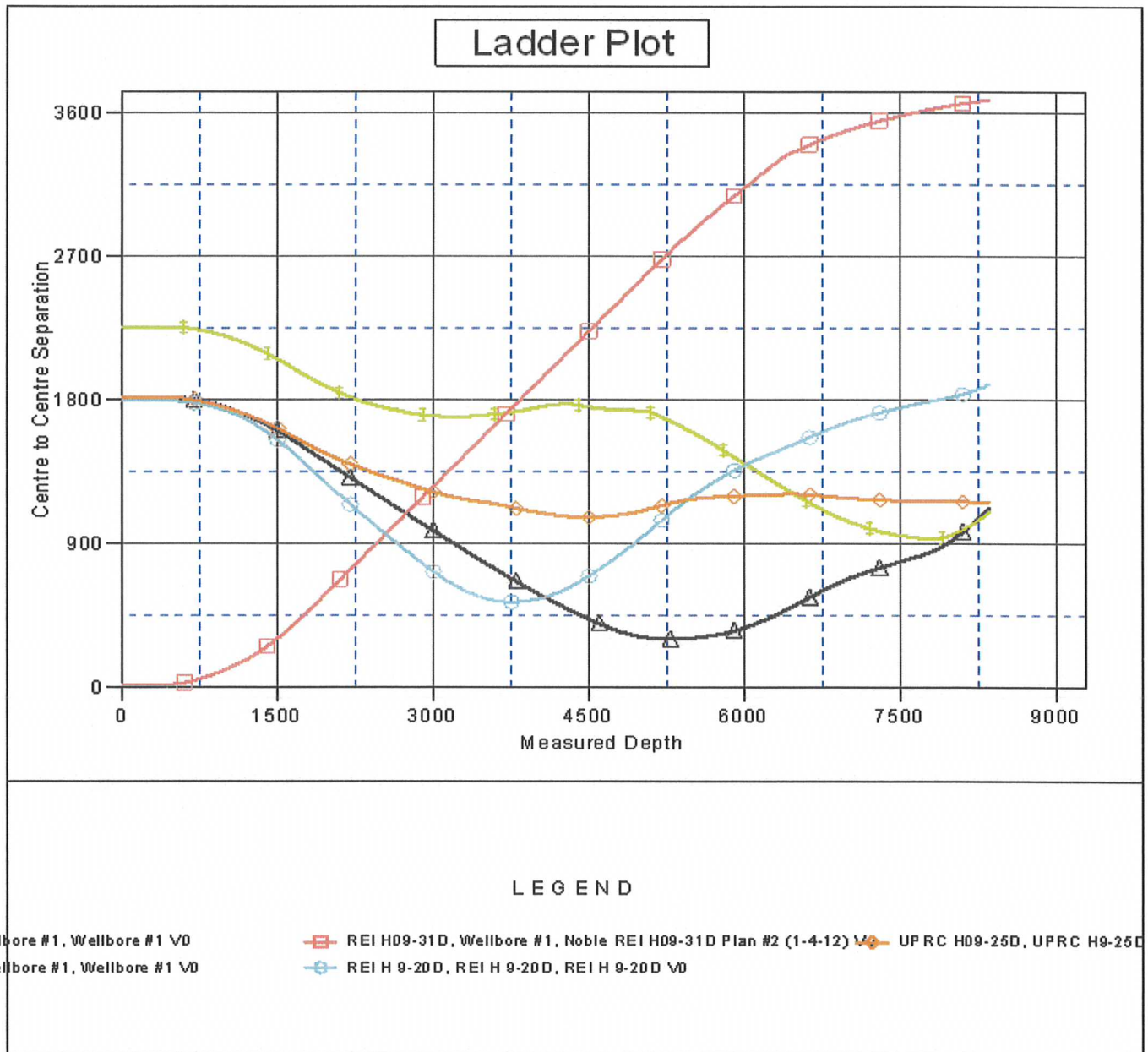
Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
REI H 9-20D PAD SEC.9-T3N-R65W						
REI H 9-20D - REI H 9-20D - REI H 9-20D	3,755.6	3,535.1	537.8	501.4	14.743	CC, ES
REI H 9-20D - REI H 9-20D - REI H 9-20D	4,000.0	3,744.8	555.0	515.7	14.114	SF
UPRC H09-25D - UPRC H9-25D - UPRC H9-25D	4,473.5	4,022.6	1,067.6	1,029.7	28.176	CC
UPRC H09-25D - UPRC H9-25D - UPRC H9-25D	4,500.0	4,041.0	1,067.7	1,029.5	27.932	ES
UPRC H09-25D - UPRC H9-25D - UPRC H9-25D	8,350.4	7,911.1	1,166.2	1,094.0	16.162	SF
REI H09-31D Pad Sec.9-T3N-R65W						
REI H09-31D - Wellbore #1 - Noble REI H09-31D Plan #	366.3	367.3	20.2	18.7	14.164	CC
REI H09-31D - Wellbore #1 - Noble REI H09-31D Plan #	400.0	401.0	20.2	18.6	12.804	ES
REI H09-31D - Wellbore #1 - Noble REI H09-31D Plan #	500.0	500.4	23.1	21.1	11.608	SF
UPRC 9-11J (Exist.) - Wellbore #1 - Wellbore #1	5,283.2	4,885.6	305.4	258.7	6.543	CC, ES
UPRC 9-11J (Exist.) - Wellbore #1 - Wellbore #1	5,300.0	4,900.4	305.5	258.7	6.538	SF
UPRC 9-14J5 (Exist.) - Wellbore #1 - Wellbore #1	7,790.2	7,300.0	935.9	872.0	14.634	CC, ES
UPRC 9-14J5 (Exist.) - Wellbore #1 - Wellbore #1	7,800.0	7,300.0	936.0	872.0	14.629	SF

Offset Design REI H 9-20D PAD SEC.9-T3N-R65W - REI H 9-20D - REI H 9-20D - REI H 9-20D												Offset Site Error: 0.0 ft	
Survey Program: 774-MWD												Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance					Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (")	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)		Separation Factor
0.0	0.0	0.0	0.0	0.0	0.0	156.92	-1,655.7	705.5	1,799.8	1,799.8	0.00	N/A	
100.0	100.0	98.1	98.1	0.1	0.1	156.92	-1,655.7	705.5	1,799.8	1,799.6	0.22	8,146.393	
200.0	200.0	198.2	198.2	0.3	0.2	156.92	-1,655.7	705.6	1,799.8	1,799.2	0.56	3,234.340	
300.0	300.0	298.2	298.2	0.6	0.3	156.91	-1,655.6	705.7	1,799.8	1,798.9	0.89	2,017.704	
400.0	400.0	398.3	398.3	0.8	0.4	156.91	-1,655.6	705.8	1,799.7	1,798.5	1.23	1,466.174	
500.0	500.0	498.4	498.4	1.0	0.6	10.92	-1,655.5	706.0	1,798.0	1,796.5	1.54	1,166.183	
600.0	599.8	598.3	598.3	1.2	0.7	10.96	-1,655.4	706.2	1,792.9	1,791.0	1.85	968.662	
700.0	699.5	698.0	698.0	1.4	0.8	11.04	-1,655.2	706.5	1,784.3	1,782.1	2.18	818.732	
800.0	798.7	798.9	798.9	1.7	0.9	11.15	-1,655.0	706.8	1,772.3	1,769.7	2.55	695.563	
900.0	897.5	904.5	904.5	2.0	1.1	11.32	-1,654.7	706.7	1,756.6	1,753.6	3.00	586.498	
1,000.0	995.6	1,013.0	1,013.0	2.3	1.3	11.54	-1,654.1	706.2	1,737.2	1,733.7	3.45	502.941	
1,100.0	1,093.1	1,151.7	1,151.6	2.8	1.6	11.96	-1,652.3	702.5	1,713.1	1,709.1	3.98	429.991	
1,200.0	1,189.6	1,314.9	1,314.4	3.3	2.0	12.65	-1,646.7	693.0	1,682.6	1,678.0	4.61	365.388	
1,300.0	1,285.3	1,476.9	1,475.4	3.8	2.4	13.63	-1,636.4	677.4	1,645.1	1,639.9	5.26	312.846	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well REI H09-24D
Project:	SEC.9-T3N-R65W	TVD Reference:	WELL @ 4842.0ft (Original Well Elev)
Reference Site:	REI H09-31D Pad Sec.9-T3N-R65W	MD Reference:	WELL @ 4842.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	REI H09-24D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Noble REI H09-24D Plan #2 (1-12-12)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4842.0ft (Original Well Elev) Coordinates are relative to: REI H09-24D
 Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone
 Central Meridian is -105.500000 ° Grid Convergence at Surface is: 0.53°



Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well REI H09-24D
Project:	SEC.9-T3N-R65W	TVD Reference:	WELL @ 4842.0ft (Original Well Elev)
Reference Site:	REI H09-31D Pad Sec.9-T3N-R65W	MD Reference:	WELL @ 4842.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	REI H09-24D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Noble REI H09-24D Plan #2 (1-12-12)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4842.0ft (Original Well Elev) Coordinates are relative to: REI H09-24D
 Offset Depths are relative to Offset Datum
 Central Meridian is -105.500000 °
 Coordinate System is US State Plane 1983, Colorado Northern Zone
 Grid Convergence at Surface is: 0.53°

