

SRC ENERGY

**WELD COUNTY (NAD83, TRUE NORTH)
6N-66W-18 LINCOLN STATE 3-18 PAD
LINCOLN STATE 41N-17B-M**

**Wellbore #1
Design #1**

Anticollision Summary Report

12 December, 2017

Reference	Design #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 9,999.98 usft	Error Surface:	Pedal Curve		
Warning Levels Evaluated at:	2.45 Sigma	Casing Method:	Added to Error Values		

Survey Tool Program	Date	12/12/2017			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	1,750.00	Design #1 (Wellbore #1)	SRC Energy_ISCWSA REV	Fixed:v2:crustal field declination	
1,750.00	15,368.22	Design #1 (Wellbore #1)	SRC Energy_ISCWSA REV	Fixed:v2:crustal field declination	

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
6N-66W-06 Offsets Incomplete						
Simonsen-Schaefer 7E-203 - PDC Energy PR Well - Actua	6,554.29	12,010.00	3,028.01	2,904.10	24.437	CC, ES
Simonsen-Schaefer 7E-203 - PDC Energy PR Well - Actua	6,700.00	12,010.00	3,043.54	2,918.32	24.304	SF
Simonsen-Schaefer 7E-423 - PDC Energy PR Well - Actua	6,641.63	11,988.00	2,663.48	2,560.73	25.921	CC
Simonsen-Schaefer 7E-423 - PDC Energy PR Well - Actua	6,650.00	11,988.00	2,663.53	2,560.67	25.894	ES
Simonsen-Schaefer 7E-423 - PDC Energy PR Well - Actua	7,250.00	11,988.00	2,884.58	2,769.73	25.115	SF
Simonsen-Schaefer 7J-243 - PDC Energy PR Well - Actua	6,612.32	11,830.00	2,497.14	2,403.99	26.809	CC, ES
Simonsen-Schaefer 7J-243 - PDC Energy PR Well - Actua	7,700.00	11,830.00	3,030.14	2,910.10	25.243	SF
Simonsen-Schaefer 7J-403 - PDC Planned Well - Planne	6,709.86	11,938.00	2,335.28	2,267.23	34.316	CC, ES
Simonsen-Schaefer 7J-403 - PDC Planned Well - Planne	8,200.00	11,938.00	3,095.79	2,977.59	26.191	SF
Simonsen-Schaefer 7M-243 - PDC Planned Well - Plann	6,850.00	11,983.00	2,098.47	2,054.41	47.624	ES
Simonsen-Schaefer 7M-243 - PDC Planned Well - Plann	6,852.01	11,983.00	2,098.47	2,054.43	47.652	CC
Simonsen-Schaefer 7M-243 - PDC Planned Well - Plann	9,000.00	11,983.00	3,047.10	2,925.96	25.153	SF
6N-66W-07 Offsets Incomplete						
FRYE 1 - Marlin Oil AB Well - No Surveys	250.00	200.00	2,268.12	2,257.76	218.984	CC
FRYE 1 - Marlin Oil AB Well - No Surveys	400.00	349.93	2,271.41	2,256.10	148.374	ES
FRYE 1 - Marlin Oil AB Well - No Surveys	4,600.00	4,481.00	2,554.29	2,386.69	15.240	SF
FRYE-SWANSON-FRYE 1 - PDC Energy AB Well - Actua	9,657.09	7,087.21	2,271.72	2,173.11	23.038	CC
FRYE-SWANSON-FRYE 1 - PDC Energy AB Well - Actua	9,700.00	7,088.76	2,272.13	2,172.34	22.769	ES
FRYE-SWANSON-FRYE 1 - PDC Energy AB Well - Actua	10,400.00	7,113.79	2,389.96	2,275.51	20.882	SF
HERGERT 1 - Frizzell AB Well - No Surveys	250.00	260.00	2,508.65	2,496.41	204.894	CC
HERGERT 1 - Frizzell AB Well - No Surveys	400.00	409.93	2,511.09	2,493.74	144.695	ES
HERGERT 1 - Frizzell AB Well - No Surveys	6,800.00	6,773.11	2,909.54	2,654.99	11.430	SF
Schaefer 34-7D - PDC Energy PR Well - Actual Ensign S	8,228.30	7,307.49	2,301.89	2,215.76	26.726	CC
Schaefer 34-7D - PDC Energy PR Well - Actual Ensign S	8,300.00	7,306.87	2,303.00	2,215.07	26.190	ES
Schaefer 34-7D - PDC Energy PR Well - Actual Ensign S	9,100.00	7,300.04	2,461.40	2,357.57	23.706	SF
Schaefer 43-7D - PDC Energy PR Well - Actual Ensign S	557.27	686.23	3,264.29	3,256.12	399.841	CC, ES
Schaefer 43-7D - PDC Energy PR Well - Actual Ensign S	11,200.00	7,097.13	3,837.46	3,699.70	27.857	SF
Schaefer 7DD - PDC Energy PR Well - Actual Ensign Su	8,807.57	7,236.94	2,950.25	2,865.08	34.638	CC
Schaefer 7DD - PDC Energy PR Well - Actual Ensign Su	8,900.00	7,236.75	2,951.70	2,864.31	33.775	ES
Schaefer 7DD - PDC Energy PR Well - Actual Ensign Su	10,100.00	7,234.20	3,220.93	3,111.26	29.371	SF
Schaefer 7TD - PDC Energy PR Well - Actual Ensign Sur	8,746.63	7,170.91	1,731.37	1,647.40	20.619	CC
Schaefer 7TD - PDC Energy PR Well - Actual Ensign Sur	8,800.00	7,171.26	1,732.20	1,646.63	20.243	ES
Schaefer 7TD - PDC Energy PR Well - Actual Ensign Sur	9,300.00	7,174.61	1,817.65	1,720.48	18.705	SF
Schaefer 7XD - PDC Energy PR Well - Actual Ensign Su	10,220.65	7,152.12	2,930.27	2,800.03	22.500	CC
Schaefer 7XD - PDC Energy PR Well - Actual Ensign Su	10,300.00	7,154.24	2,931.34	2,798.75	22.108	ES
Schaefer 7XD - PDC Energy PR Well - Actual Ensign Su	11,200.00	7,182.25	3,089.49	2,936.17	20.150	SF

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)		Separation Factor	Warning
Offset Well - Wellbore - Design						
6N-66W-08 Offsets Incomplete						
Booth U-8-7HN - Bayswater Planned Well - Planned Ens	8,078.01	16,217.20	2,432.74	2,094.46	7.191	CC
Booth U-8-7HN - Bayswater Planned Well - Planned Ens	8,100.00	16,213.15	2,432.84	2,094.10	7.182	ES, SF
Booth V-8-7HN - Bayswater Planned Well - Planned Ensi	8,072.85	16,303.30	2,134.54	1,796.95	6.323	CC
Booth V-8-7HN - Bayswater Planned Well - Planned Ensi	8,100.00	16,292.22	2,134.68	1,796.73	6.317	ES, SF
Booth W-8-7HC - Bayswater Planned Well - Planned Ens	8,075.43	16,405.49	1,945.13	1,608.39	5.776	CC, ES, SF
Booth X-8-7HN - Bayswater Planned Well - Planned Ensi	8,066.76	16,246.00	1,772.99	1,435.95	5.260	CC
Booth X-8-7HN - Bayswater Planned Well - Planned Ensi	8,100.00	16,225.84	1,773.18	1,435.91	5.257	ES, SF
HERGERT 8-33 - SRC Energy PR Well - No Surveys	11,084.57	7,028.43	2,146.09	1,774.27	5.772	CC
HERGERT 8-33 - SRC Energy PR Well - No Surveys	11,100.00	7,028.45	2,146.15	1,773.90	5.765	ES
HERGERT 8-33 - SRC Energy PR Well - No Surveys	11,300.00	7,028.81	2,156.88	1,779.64	5.718	SF
HERGERT 8-34 - SRC Energy PR Well - No Surveys	12,240.89	7,018.47	2,117.45	1,712.04	5.223	CC
HERGERT 8-34 - SRC Energy PR Well - No Surveys	12,300.00	7,018.58	2,118.28	1,711.26	5.204	ES
HERGERT 8-34 - SRC Energy PR Well - No Surveys	12,500.00	7,018.93	2,133.25	1,721.74	5.184	SF
HERGERT 8-43 - SRC Energy PR Well - No Surveys	13,755.02	7,016.15	2,134.94	1,685.04	4.745	CC
HERGERT 8-43 - SRC Energy PR Well - No Surveys	13,800.00	7,016.23	2,135.42	1,684.29	4.734	ES
HERGERT 8-43 - SRC Energy PR Well - No Surveys	14,000.00	7,016.58	2,148.95	1,693.48	4.718	SF
6N-66W-09 Offsets Incomplete						
Circle B 6-66-9-0164CH - SRC Energy PR Well - Actual S	15,368.22	11,895.00	2,345.29	2,071.99	8.581	CC, ES, SF
LOVELY 14-9 - Bill Barrett AB Well - No Surveys	15,368.22	7,009.00	2,377.79	1,889.66	4.871	CC, ES, SF
6N-66W-16 Offsets Incomplete						
STATE-HOPPE 16-3 - Noble Energy PR Well - Actual VE	15,368.22	6,999.84	854.40	705.51	5.738	CC, ES, SF
6N-66W-17 Offsets Incomplete						
ANTELOPE 1-17 - Apache AB Well - No Surveys	12,160.53	7,000.67	301.01	-101.42	0.748	Level 1, CC, ES, SF
FRANK KEMP 1 - UK Operator AB Well - No Surveys	13,450.86	4,850.00	2,670.69	2,439.08	11.531	CC
FRANK KEMP 1 - UK Operator AB Well - No Surveys	13,500.00	4,850.00	2,671.14	2,438.54	11.484	ES
FRANK KEMP 1 - UK Operator AB Well - No Surveys	14,100.00	4,850.00	2,748.45	2,502.93	11.195	SF
Fritzler 17-32-12 - GWOG PR Well - Actual Ensign Surve	14,170.55	7,410.99	949.68	706.74	3.909	CC
Fritzler 17-32-12 - GWOG PR Well - Actual Ensign Surve	14,200.00	7,410.68	950.13	705.74	3.888	ES
Fritzler 17-32-12 - GWOG PR Well - Actual Ensign Surve	14,300.00	7,409.62	958.46	710.45	3.865	SF
Fritzler 17-42-11 - GWOG PR Well - Actual Ensign Surve	15,368.22	7,376.76	973.93	695.05	3.492	CC, ES, SF
FRITZLER 43-17 - GWOG PR Well - Actual Ensign Surve	14,791.82	7,198.21	1,591.67	1,336.93	6.248	CC
FRITZLER 43-17 - GWOG PR Well - Actual Ensign Surve	14,800.00	7,198.11	1,591.69	1,336.69	6.242	ES
FRITZLER 43-17 - GWOG PR Well - Actual Ensign Surve	15,000.00	7,195.73	1,605.23	1,345.67	6.184	SF
HERGERT 17-21 - SRC Energy PR Well - No Surveys	12,396.57	7,014.75	969.27	559.41	2.365	CC
HERGERT 17-21 - SRC Energy PR Well - No Surveys	12,400.00	7,014.75	969.28	559.33	2.364	ES, SF
HERGERT 17-22 - Noble Energy PR Well - Actual VES S	11,007.26	7,036.31	651.85	511.67	4.650	CC, ES, SF
HERGERT 17-25 - SRC Energy PR Well - No Surveys	11,471.87	7,022.11	163.40	-219.55	0.427	Level 1, CC, ES, SF
MCGLOTHLIN 17-11 - SRC Energy PR Well - No Survey	14,713.77	7,006.16	1,190.11	712.30	2.491	CC, ES
MCGLOTHLIN 17-11 - SRC Energy PR Well - No Survey	14,800.00	7,006.00	1,193.23	713.69	2.488	SF
MCGLOTHLIN 17-12 - SRC Energy SI Well - No Surveys	13,625.09	7,006.08	1,166.28	720.57	2.617	CC, ES
MCGLOTHLIN 17-12 - SRC Energy SI Well - No Surveys	13,700.00	7,005.95	1,168.69	721.35	2.613	SF
MCGLOTHLIN 17-42 - SRC Energy PR Well - No Survey	13,583.42	6,974.84	1,624.12	1,180.73	3.663	CC
MCGLOTHLIN 17-42 - SRC Energy PR Well - No Survey	13,600.00	6,974.87	1,624.20	1,180.31	3.659	ES
MCGLOTHLIN 17-42 - SRC Energy PR Well - No Survey	13,700.00	6,975.05	1,628.29	1,181.78	3.647	SF
McGlothlin 8-6-17 - GWOG PR Well - Actual MS Energy	15,368.22	7,228.00	2,233.16	1,960.11	8.178	CC, ES, SF
SCHAEFFER 17-31 - SRC Energy PR Well - No Surveys	12,315.96	6,975.60	1,792.82	1,386.72	4.415	CC
SCHAEFFER 17-31 - SRC Energy PR Well - No Surveys	12,400.00	6,975.75	1,794.79	1,386.26	4.393	ES
SCHAEFFER 17-31 - SRC Energy PR Well - No Surveys	12,500.00	6,975.93	1,802.24	1,391.29	4.385	SF
SCHAEFFER 17-32 - SRC Energy PR Well - No Surveys	10,821.16	6,975.96	1,817.28	1,455.03	5.017	CC
SCHAEFFER 17-32 - SRC Energy PR Well - No Surveys	10,900.00	6,976.10	1,818.99	1,454.42	4.989	ES
SCHAEFFER 17-32 - SRC Energy PR Well - No Surveys	11,000.00	6,976.28	1,826.06	1,458.86	4.973	SF
ULRICH PC I 17-07D - SRC Energy PR Well - Actual Ens	13,507.89	7,165.96	331.08	102.72	1.450	Level 3, CC, ES, SF
ULRICH PC I 17-08 - SRC Energy PR Well - No Surveys	14,674.63	6,984.77	266.59	-209.31	0.560	Level 1, CC, ES, SF
ULRICH PC I 17-17D - SRC Energy PR Well - Actual Ens	13,970.66	7,180.29	557.85	323.35	2.379	CC, ES, SF

Summary

Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
6N-66W-18 LINCOLN STATE 3-18 PAD						
LINCOLN 30C-13-M - Wellbore #1 - Design #1	200.00	196.00	216.54	208.98	28.621	CC, ES
LINCOLN 30C-13-M - Wellbore #1 - Design #1	8,300.00	6,863.42	1,366.14	1,307.44	23.274	SF
LINCOLN 30N-13B-M - Wellbore #1 - Design #1	250.00	245.00	227.93	220.32	29.982	CC, ES
LINCOLN 30N-13B-M - Wellbore #1 - Design #1	8,400.00	6,750.00	1,597.64	1,536.93	26.317	SF
LINCOLN 31C-13-M - Wellbore #1 - Design #1	7,568.94	7,189.12	52.12	7.77	1.175	Level 2, CC, ES, SF
LINCOLN 31N-13B-M - Wellbore #1 - Design #1	7,286.39	7,350.86	140.87	99.56	3.410	CC, ES, SF
LINCOLN 31N-13C-M - Wellbore #1 - Design #1	250.00	247.00	184.32	176.72	24.244	CC, ES
LINCOLN 31N-13C-M - Wellbore #1 - Design #1	7,600.00	7,118.80	458.13	414.43	10.484	SF
LINCOLN 32C-13-M - Wellbore #1 - Design #1	250.00	247.00	196.93	189.33	25.903	CC, ES
LINCOLN 32C-13-M - Wellbore #1 - Design #1	8,000.00	6,976.27	909.86	853.21	16.060	SF
LINCOLN 32N-13B-M - Wellbore #1 - Design #1	250.00	247.00	189.81	182.21	24.966	CC, ES
LINCOLN 32N-13B-M - Wellbore #1 - Design #1	7,800.00	6,989.41	715.23	664.89	14.207	SF
LINCOLN 4C-13-M - Wellbore #1 - Design #1	250.00	247.00	189.80	182.20	24.964	CC, ES
LINCOLN 4C-13-M - Wellbore #1 - Design #1	7,800.00	7,039.45	645.86	598.25	13.566	SF
LINCOLN 4N-13B-M - Wellbore #1 - Design #1	250.00	247.00	196.91	189.31	25.900	CC, ES
LINCOLN 4N-13B-M - Wellbore #1 - Design #1	7,900.00	6,928.99	932.84	883.88	19.050	SF
LINCOLN 4N-13C-M - Wellbore #1 - Design #1	250.00	246.00	205.99	198.38	27.095	CC, ES
LINCOLN 4N-13C-M - Wellbore #1 - Design #1	8,100.00	6,869.49	1,129.84	1,076.35	21.121	SF
LINCOLN 5N-13A-M - Wellbore #1 - Design #1	250.00	247.00	181.23	173.63	23.837	CC, ES
LINCOLN 5N-13A-M - Wellbore #1 - Design #1	7,050.00	7,489.89	372.71	330.04	8.736	SF
LINCOLN 5N-13C-M - Wellbore #1 - Design #1	250.00	247.00	184.41	176.81	24.255	CC, ES
LINCOLN 5N-13C-M - Wellbore #1 - Design #1	7,700.00	7,066.75	473.77	426.07	9.932	SF
LINCOLN STATE 1C-17-M - Wellbore #1 - Design #1	250.00	250.00	80.15	72.54	10.540	CC, ES
LINCOLN STATE 1C-17-M - Wellbore #1 - Design #1	15,368.22	15,489.72	902.31	414.18	1.848	SF
LINCOLN STATE 1N-17B-M - Wellbore #1 - Design #1	250.00	250.00	60.12	52.51	7.906	CC, ES
LINCOLN STATE 1N-17B-M - Wellbore #1 - Design #1	15,368.22	15,352.76	667.13	170.36	1.343	Level 3, SF
LINCOLN STATE 1N-17C-M - Wellbore #1 - Design #1	250.00	249.00	99.82	92.22	13.128	CC, ES
LINCOLN STATE 1N-17C-M - Wellbore #1 - Design #1	15,368.22	15,404.20	1,088.65	590.26	2.184	SF
LINCOLN STATE 26C-17-M - Wellbore #1 - Design #1	200.00	199.00	139.90	132.33	18.489	CC, ES
LINCOLN STATE 26C-17-M - Wellbore #1 - Design #1	15,368.22	15,523.53	1,554.89	1,059.70	3.140	SF
LINCOLN STATE 26N-17B-M - Wellbore #1 - Design #1	250.00	249.00	119.86	112.25	15.763	CC, ES
LINCOLN STATE 26N-17B-M - Wellbore #1 - Design #1	15,368.22	15,334.93	1,319.80	820.44	2.643	SF
LINCOLN STATE 40C-17-M - Wellbore #1 - Design #1	479.33	474.62	59.94	52.10	7.640	CC, ES
LINCOLN STATE 40C-17-M - Wellbore #1 - Design #1	15,368.22	15,603.94	685.32	202.31	1.419	Level 3, SF
LINCOLN STATE 40N-17C-M - Wellbore #1 - Design #1	480.86	474.58	79.91	72.07	10.184	CC, ES
LINCOLN STATE 40N-17C-M - Wellbore #1 - Design #1	15,368.22	15,545.73	788.06	289.52	1.581	SF
LINCOLN STATE 41N-17A-M - Wellbore #1 - Design #1	250.00	250.00	40.07	32.47	5.270	CC
LINCOLN STATE 41N-17A-M - Wellbore #1 - Design #1	15,368.22	15,221.76	453.15	-34.29	0.930	Level 1, ES, SF
LINCOLN STATE 41N-17C-M - Wellbore #1 - Design #1	388.79	389.77	20.03	12.30	2.590	CC
LINCOLN STATE 41N-17C-M - Wellbore #1 - Design #1	15,368.22	15,509.83	296.92	-89.09	0.769	Level 1, ES, SF
LINCOLN STATE 8C-17-M - Wellbore #1 - Design #1	476.16	474.60	19.99	12.14	2.548	CC
LINCOLN STATE 8C-17-M - Wellbore #1 - Design #1	15,368.22	15,557.00	260.53	-91.88	0.739	Level 1, ES, SF
LINCOLN STATE 8N-17B-M - Wellbore #1 - Design #1	477.79	474.65	39.96	32.12	5.094	CC
LINCOLN STATE 8N-17B-M - Wellbore #1 - Design #1	15,368.22	15,414.73	440.09	-60.72	0.879	Level 1, ES, SF

Summary

	Reference	Offset	Distance			
Site Name	Measured	Measured	Between	Between	Separation	Warning
Offset Well - Wellbore - Design	Depth	Depth	Centres	Ellipses	Factor	
	(usft)	(usft)	(usft)	(usft)		
6N-66W-18 Offsets Incomplete						
ANTELOPE 1 - Marlin Oil AB Sussex Well - No Surveys	250.00	180.00	2,737.14	2,727.37	280.253	CC
ANTELOPE 1 - Marlin Oil AB Sussex Well - No Surveys	4,600.00	4,435.00	2,844.92	2,678.51	17.096	SF
ANTELOPE 1 - Marlin Oil AB Sussex Well - No Surveys	9,600.00	4,435.00	2,754.08	2,658.32	28.762	ES
CARLSON 18-41 - Noble Energy SI Well - No Surveys	9,590.73	6,980.79	1,829.35	1,502.79	5.602	CC
CARLSON 18-41 - Noble Energy SI Well - No Surveys	9,600.00	6,980.80	1,829.37	1,502.53	5.597	ES
CARLSON 18-41 - Noble Energy SI Well - No Surveys	9,800.00	6,981.16	1,841.28	1,508.87	5.539	SF
CARLSON 33-18 - GWOG PR Well - No Surveys	8,193.62	7,008.32	1,311.66	1,023.73	4.556	CC
CARLSON 33-18 - GWOG PR Well - No Surveys	8,200.00	7,008.33	1,311.67	1,023.56	4.553	ES
CARLSON 33-18 - GWOG PR Well - No Surveys	8,300.00	7,008.50	1,315.96	1,025.04	4.523	SF
DICKERSON 1 - Stuarco AB Sussex Well - No Surveys	5,000.00	4,854.00	2,679.64	2,497.21	14.689	SF
DICKERSON 1 - Stuarco AB Sussex Well - No Surveys	9,457.24	4,854.00	2,155.99	2,100.16	38.622	CC
DICKERSON 1 - Stuarco AB Sussex Well - No Surveys	9,500.00	4,854.00	2,156.41	2,100.03	38.244	ES
DUNBAR 18-31 - Noble Energy AB Well - Actual VES Su	6,607.42	6,485.19	1,990.40	1,960.84	67.325	CC, ES
DUNBAR 18-31 - Noble Energy AB Well - Actual VES Su	8,300.00	6,934.97	2,679.95	2,628.91	52.508	SF
KOCHERT 11-18 - SRC Energy SI Well - No Surveys	250.00	242.00	1,759.96	1,748.30	150.883	CC
KOCHERT 11-18 - SRC Energy SI Well - No Surveys	6,450.00	6,423.35	1,883.12	1,641.23	7.785	ES
KOCHERT 11-18 - SRC Energy SI Well - No Surveys	6,650.00	6,619.52	1,917.58	1,668.32	7.693	SF
KOCHERT 12-18 - SRC Energy SI Well - No Surveys	6,463.31	6,413.62	1,748.41	1,506.82	7.237	CC
KOCHERT 12-18 - SRC Energy SI Well - No Surveys	6,500.00	6,450.15	1,749.44	1,506.47	7.200	ES
KOCHERT 12-18 - SRC Energy SI Well - No Surveys	6,650.00	6,603.48	1,774.92	1,526.16	7.135	SF
PEXOIL MURPHY & DICKERSON 1 - Pexoil AB Sussex	4,523.33	4,421.00	1,311.34	1,145.58	7.911	CC, ES, SF
R A 1 - Francis Energy AB Well - No Surveys	6,498.16	6,448.32	2,577.20	2,334.83	10.633	CC
R A 1 - Francis Energy AB Well - No Surveys	6,550.00	6,500.35	2,578.75	2,334.40	10.554	ES
R A 1 - Francis Energy AB Well - No Surveys	6,800.00	6,732.11	2,629.44	2,376.20	10.383	SF
TIGGES 18-11 - SRC Energy PR Well - No Surveys	9,317.30	7,009.30	782.41	462.74	2.448	CC, ES, SF
TIGGES 18-13 - SRC Energy PR Well - No Surveys	8,204.05	7,011.33	181.12	-107.19	0.628	Level 1, CC, ES, SF
TIGGES 18-14 - SRC Energy PR Well - No Surveys	9,430.45	7,009.50	525.43	202.49	1.627	CC, ES, SF
TIGGES 18-15 - SRC Energy PR Well - No Surveys	8,729.55	7,003.26	312.53	9.88	1.033	Level 2, CC, ES, SF
TIGGES 31-18 - SRC Energy SI Well - No Surveys	8,227.04	7,011.37	752.31	463.36	2.604	CC, ES
TIGGES 31-18 - SRC Energy SI Well - No Surveys	8,300.00	7,011.50	755.84	465.31	2.602	SF
WALKER 11-18 - Petro Canada AB Well - No Surveys	4,185.55	4,150.88	1,778.50	1,623.01	11.438	CC
WALKER 11-18 - Petro Canada AB Well - No Surveys	6,450.00	6,408.35	1,787.36	1,545.86	7.401	ES
WALKER 11-18 - Petro Canada AB Well - No Surveys	6,600.00	6,556.54	1,806.66	1,559.57	7.312	SF
Walker-Shands 18-18 - SRC Energy PR Well - Actual En	250.00	235.00	252.60	241.32	22.386	CC
Walker-Shands 18-18 - SRC Energy PR Well - Actual En	400.00	384.93	256.04	239.71	15.680	ES
Walker-Shands 18-18 - SRC Energy PR Well - Actual En	800.00	789.76	281.67	253.80	10.106	SF
Walker-Shands 3-18 - SRC Energy PR Well - No Surveys	250.00	226.00	270.75	259.59	24.265	CC
Walker-Shands 3-18 - SRC Energy PR Well - No Surveys	400.00	375.93	274.12	257.92	16.929	ES
Walker-Shands 3-18 - SRC Energy PR Well - No Surveys	6,600.00	6,555.54	736.41	490.46	2.994	SF
Walker-Shands 6-18 - SRC Energy PR Well - Actual Ens	2,885.51	2,911.80	187.64	154.06	5.588	CC
Walker-Shands 6-18 - SRC Energy PR Well - Actual Ens	2,900.00	2,925.63	187.68	154.03	5.578	ES
Walker-Shands 6-18 - SRC Energy PR Well - Actual Ens	3,000.00	3,021.85	189.59	155.53	5.567	SF
6N-67W-10 Offsets Incomplete						
Bower FD 11-322HC - GWOG Planned Well - Planned G	6,497.62	13,035.16	8,541.33	8,478.54	136.025	CC
Bower FD 11-322HC - GWOG Planned Well - Planned G	6,500.00	13,035.16	8,541.33	8,478.53	136.013	ES
Bower FD 11-322HC - GWOG Planned Well - Planned G	6,600.00	13,035.16	8,549.72	8,486.72	135.720	SF
Bower FD 11-322HN - GWOG Planned Well - Planned G	6,484.09	12,854.66	8,512.51	8,451.02	138.430	CC, ES
Bower FD 11-322HN - GWOG Planned Well - Planned G	6,600.00	12,854.66	8,523.28	8,461.55	138.072	SF
Bower FD 11-359HN - GWOG Planned Well - Planned G	6,492.37	13,026.84	8,434.38	8,377.59	148.522	CC, ES
Bower FD 11-359HN - GWOG Planned Well - Planned G	6,600.00	13,026.84	8,443.77	8,386.80	148.218	SF
Bower FD 11-362HC - GWOG Planned Well - Planned G	6,500.72	13,174.35	8,395.52	8,339.75	150.545	CC, ES
Bower FD 11-362HC - GWOG Planned Well - Planned G	6,600.00	13,174.35	8,403.57	8,347.66	150.314	SF
Bower FD 11-362HN - GWOG Planned Well - Planned G	6,487.71	13,011.68	8,347.51	8,292.16	150.816	CC, ES
Bower FD 11-362HN - GWOG Planned Well - Planned G	6,600.00	13,011.68	8,357.84	8,302.33	150.578	SF
MILLER 1 - GWOG AB Well - Actual VES Surveys	0.00	0.00	8,477.40			
MILLER 1 - GWOG AB Well - Actual VES Surveys	7,400.00	7,057.73	9,163.50	9,129.75	271.515	SF

Summary

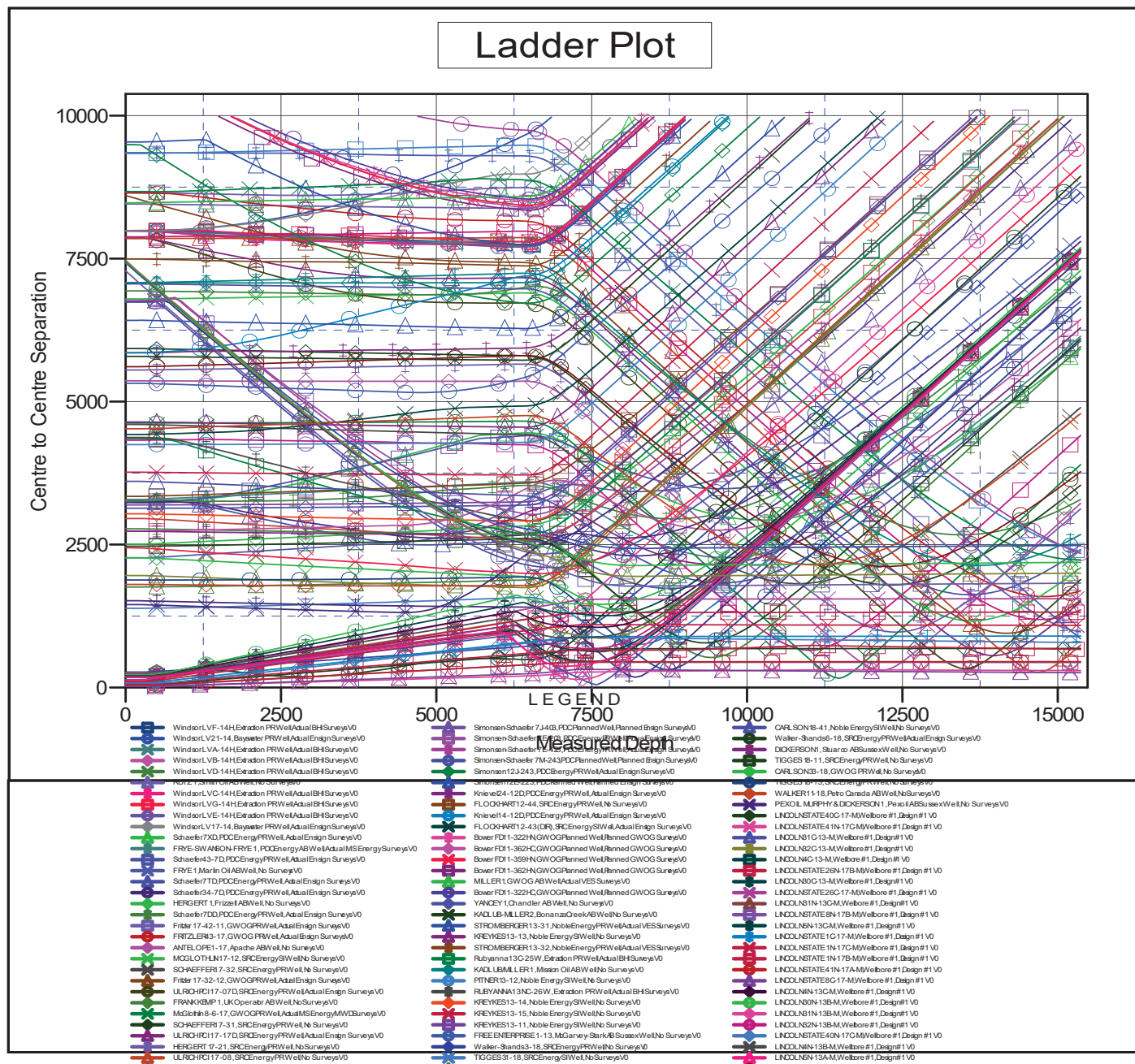
Site Name Offset Well - Wellbore - Design	Reference	Offset	Distance		Separation Factor	Warning
	Measured Depth (usft)	Measured Depth (usft)	Between Centres (usft)	Between Ellipses (usft)		
6N-67W-12 Offsets Incomplete						
FLOCKHART 12-43(DIR) - SRC Energy SI Well - Actual E	250.00	227.00	4,426.92	4,415.92	402.382	CC
FLOCKHART 12-43(DIR) - SRC Energy SI Well - Actual E	800.00	854.02	4,441.16	4,410.82	146.380	ES
FLOCKHART 12-43(DIR) - SRC Energy SI Well - Actual E	6,300.00	6,397.92	4,920.60	4,742.11	27.567	SF
FLOCKHART 12-44 - SRC Energy PR Well - No Surveys	250.00	260.00	3,344.32	3,332.08	273.148	CC
FLOCKHART 12-44 - SRC Energy PR Well - No Surveys	1,700.00	1,705.99	3,390.60	3,325.34	51.955	ES
FLOCKHART 12-44 - SRC Energy PR Well - No Surveys	6,800.00	6,773.11	3,664.94	3,410.13	14.383	SF
Knievel 14-12D - PDC Energy PR Well - Actual Ensign S	150.02	154.05	5,857.10	5,849.73	794.721	CC, ES
Knievel 14-12D - PDC Energy PR Well - Actual Ensign S	6,700.00	6,966.65	7,251.43	7,196.71	132.520	SF
Knievel 24-12D - PDC Energy PR Well - Actual Ensign S	250.00	254.00	5,852.75	5,840.91	494.302	CC
Knievel 24-12D - PDC Energy PR Well - Actual Ensign S	600.00	603.38	5,859.82	5,835.80	243.988	ES
Knievel 24-12D - PDC Energy PR Well - Actual Ensign S	6,650.00	6,691.35	5,976.50	5,924.89	115.806	SF
Simonsen 12E-223 - PDC Planned Well - Planned Ensign	6,487.06	11,562.40	7,736.10	7,611.69	62.181	CC, ES
Simonsen 12E-223 - PDC Planned Well - Planned Ensign	6,600.00	11,562.40	7,746.51	7,621.76	62.096	SF
Simonsen 12J-243 - PDC Energy PR Well - Actual Ensign	6,492.91	11,570.00	6,721.78	6,595.64	53.288	CC, ES
Simonsen 12J-243 - PDC Energy PR Well - Actual Ensign	6,600.00	11,570.00	6,731.13	6,604.72	53.248	SF
6N-67W-13 Offsets Incomplete						
FREE ENTERPRISE 1-13 - McGarvey-Stark AB Sussex	4,747.66	4,500.00	5,158.60	4,989.61	30.525	CC, ES
FREE ENTERPRISE 1-13 - McGarvey-Stark AB Sussex	4,900.00	4,500.00	5,160.85	4,991.71	30.511	SF
KADLUB/MILLER 1 - Mission Oil AB Well - No Surveys	2,750.46	2,728.22	7,075.63	6,973.43	69.232	CC
KADLUB/MILLER 1 - Mission Oil AB Well - No Surveys	6,450.00	6,416.35	7,081.59	6,839.80	29.288	ES
KADLUB/MILLER 1 - Mission Oil AB Well - No Surveys	7,000.00	6,900.70	7,307.10	7,047.02	28.095	SF
KADLUB-MILLER 2 - Bonanza Creek AB Well - No Surveys	6,451.14	6,450.49	5,725.18	5,482.19	23.561	CC
KADLUB-MILLER 2 - Bonanza Creek AB Well - No Surveys	6,500.00	6,500.85	5,727.06	5,482.17	23.387	ES
KADLUB-MILLER 2 - Bonanza Creek AB Well - No Surveys	6,950.00	6,901.58	5,910.94	5,650.86	22.727	SF
KREYKES 13-11 - Noble Energy SI Well - No Surveys	250.00	241.00	3,194.13	3,182.50	274.586	CC
KREYKES 13-11 - Noble Energy SI Well - No Surveys	6,450.00	6,422.35	3,246.64	3,004.67	13.418	ES
KREYKES 13-11 - Noble Energy SI Well - No Surveys	6,750.00	6,710.59	3,319.14	3,066.31	13.128	SF
KREYKES 13-13 - Noble Energy SI Well - No Surveys	6,453.24	6,425.58	4,553.56	4,311.46	18.809	CC
KREYKES 13-13 - Noble Energy SI Well - No Surveys	6,500.00	6,472.15	4,555.28	4,311.42	18.680	ES
KREYKES 13-13 - Noble Energy SI Well - No Surveys	6,850.00	6,804.41	4,673.25	4,416.82	18.224	SF
KREYKES 13-14 - Noble Energy SI Well - No Surveys	6,455.62	6,415.95	2,913.18	2,671.43	12.051	CC
KREYKES 13-14 - Noble Energy SI Well - No Surveys	6,500.00	6,460.15	2,914.72	2,671.31	11.974	ES
KREYKES 13-14 - Noble Energy SI Well - No Surveys	6,750.00	6,701.41	2,979.89	2,727.34	11.799	SF
KREYKES 13-15 - Noble Energy SI Well - No Surveys	6,448.13	6,425.49	3,717.87	3,475.76	15.356	CC
KREYKES 13-15 - Noble Energy SI Well - No Surveys	6,450.00	6,427.35	3,717.87	3,475.70	15.352	ES
KREYKES 13-15 - Noble Energy SI Well - No Surveys	6,800.00	6,759.11	3,812.56	3,557.85	14.968	SF
PITNER 13-12 - Noble Energy SI Well - No Surveys	250.00	266.00	4,248.16	4,235.72	341.530	CC
PITNER 13-12 - Noble Energy SI Well - No Surveys	6,450.00	6,447.35	4,288.54	4,045.67	17.658	ES
PITNER 13-12 - Noble Energy SI Well - No Surveys	6,800.00	6,779.11	4,385.33	4,129.96	17.172	SF
Rubyanna 13C-25W - Extraction PR Well - Actual BHI Su	6,508.45	6,811.00	2,685.09	2,630.32	49.025	CC, ES
Rubyanna 13C-25W - Extraction PR Well - Actual BHI Su	6,600.00	6,843.00	2,692.03	2,636.81	48.747	SF
RUBYANNA 13NC-26W - Extraction PR Well - Actual BH	6,510.45	6,736.00	2,915.82	2,866.68	59.337	CC, ES
RUBYANNA 13NC-26W - Extraction PR Well - Actual BH	6,650.00	6,749.00	2,928.97	2,879.34	59.013	SF
STROMBERGER 13-31 - Noble Energy PR Well - Actual	6,461.91	6,364.13	6,278.54	6,248.52	209.099	CC, ES
STROMBERGER 13-31 - Noble Energy PR Well - Actual	7,150.00	6,919.30	6,606.82	6,573.80	200.090	SF
STROMBERGER 13-32 - Noble Energy PR Well - Actual	6,465.05	6,428.89	7,372.88	7,342.72	244.450	CC, ES
STROMBERGER 13-32 - Noble Energy PR Well - Actual	7,100.00	6,833.97	7,661.32	7,628.71	234.964	SF
YANCEY 1 - Chandler AB Well - No Surveys	250.00	237.00	3,135.31	3,123.80	272.511	CC
YANCEY 1 - Chandler AB Well - No Surveys	6,450.00	6,418.35	3,190.67	2,948.84	13.194	ES
YANCEY 1 - Chandler AB Well - No Surveys	6,750.00	6,706.59	3,263.18	3,010.50	12.914	SF

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)		Separation Factor	Warning
Offset Well - Wellbore - Design						
6N-67W-14 Offsets Incomplete						
RUTZ 1 - Smith Oil AB Well - No Surveys	6,452.98	6,424.32	8,377.79	8,135.73	34.611	CC
RUTZ 1 - Smith Oil AB Well - No Surveys	6,500.00	6,471.15	8,379.52	8,135.70	34.367	ES
RUTZ 1 - Smith Oil AB Well - No Surveys	7,050.00	6,935.21	8,637.74	8,376.26	33.034	SF
Windsor LV 17-14 - Bayswater PR Well - Actual Ensign S	0.00	0.00	7,982.63			
Windsor LV 17-14 - Bayswater PR Well - Actual Ensign S	7,000.00	7,006.59	9,200.96	9,162.53	239.408	SF
Windsor LV 21-14 - Bayswater PR Well - Actual Ensign S	0.00	0.00	7,985.00			
Windsor LV 21-14 - Bayswater PR Well - Actual Ensign S	6,800.00	1,570.00	9,927.59	9,905.46	448.708	SF
Windsor LV A-14H - Extraction PR Well - Actual BHI Surv	5,311.29	5,403.07	7,791.32	7,755.32	216.458	CC
Windsor LV A-14H - Extraction PR Well - Actual BHI Surv	5,400.00	5,450.51	7,791.56	7,755.12	213.842	ES
Windsor LV A-14H - Extraction PR Well - Actual BHI Surv	6,750.00	6,591.00	7,878.14	7,832.98	174.426	SF
Windsor LV B-14H - Extraction PR Well - Actual BHI Surv	6,446.58	6,504.28	7,741.71	7,702.75	198.713	CC
Windsor LV B-14H - Extraction PR Well - Actual BHI Surv	6,450.00	6,507.27	7,741.72	7,702.74	198.631	ES
Windsor LV B-14H - Extraction PR Well - Actual BHI Surv	6,800.00	6,629.36	7,839.90	7,799.87	195.825	SF
Windsor LV C-14H - Extraction PR Well - Actual BHI Surv	6,413.15	6,401.00	7,745.01	7,710.55	224.786	CC
Windsor LV C-14H - Extraction PR Well - Actual BHI Surv	6,446.23	6,401.00	7,745.08	7,710.53	224.184	ES
Windsor LV C-14H - Extraction PR Well - Actual BHI Surv	6,750.00	6,401.00	7,822.62	7,787.40	222.134	SF
Windsor LV D-14H - Extraction PR Well - Actual BHI Surv	6,452.65	6,478.40	7,719.06	7,685.74	231.662	CC, ES
Windsor LV D-14H - Extraction PR Well - Actual BHI Surv	6,750.00	6,495.00	7,791.89	7,757.86	228.999	SF
Windsor LV E-14H - Extraction PR Well - Actual BHI Surv	6,380.53	6,312.00	7,703.32	7,668.89	223.710	CC
Windsor LV E-14H - Extraction PR Well - Actual BHI Surv	6,400.00	6,312.00	7,703.35	7,668.86	223.364	ES
Windsor LV E-14H - Extraction PR Well - Actual BHI Surv	6,850.00	6,356.83	7,838.35	7,802.75	220.156	SF
Windsor LV F-14H - Extraction PR Well - Actual BHI Surv	6,461.83	6,588.00	7,746.35	7,706.86	196.154	CC, ES
Windsor LV F-14H - Extraction PR Well - Actual BHI Surv	6,750.00	6,682.00	7,813.49	7,773.04	193.164	SF
Windsor LV G-14H - Extraction PR Well - Actual BHI Surv	6,455.79	6,532.79	7,792.68	7,746.96	170.470	CC, ES
Windsor LV G-14H - Extraction PR Well - Actual BHI Surv	6,700.00	6,587.00	7,841.70	7,795.25	168.811	SF

Coordinates are relative to: LINCOLN STATE 41N-17B-M

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.44°



Central Meridian is -105.500000

Grid Convergence at Surface is: 0.44°

