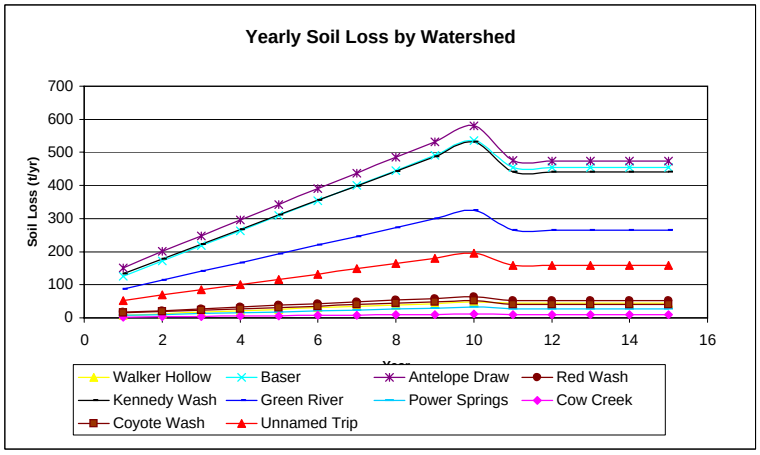
APPENDIX 4-1, 4-2

SOIL LOSS CALCULATIONS

REVISED UNIVERSAL SOIL LOSS EQUATION (RUSLE)

Watershed	Year of Operation														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Walker Hollow	7.66	12.13	16.59	21.06	25.53	29.99	34.46	38.93	43.39	47.86	44.67	44.67	44.67	44.67	44.67
Baser	125.77	172.63	218.02	263.41	308.80	354.20	399.59	444.98	490.37	535.76	455.38	453.91	453.91	453.91	453.91
Antelope Draw	151.75	200.26	247.65	295.05	342.44	389.84	437.23	484.63	532.03	579.42	475.06	473.96	473.96	473.96	473.96
Red Wash	17.00	22.18	27.37	32.56	37.74	42.93	48.11	53.30	58.49	63.67	51.86	51.86	51.86	51.86	51.86
Kennedy Wash	134.11	178.86	222.91	266.96	311.01	355.06	399.11	443.16	487.21	531.26	441.20	440.51	440.51	440.51	440.51
Green River	87.23	114.35	140.76	167.17	193.57	219.98	246.39	272.79	299.20	325.61	264.79	264.07	264.07	264.07	264.07
Power Springs	7.31	10.16	12.90	15.63	18.37	21.10	23.84	26.57	29.31	32.04	27.47	27.35	27.35	27.35	27.35
Cow Creek	2.82	3.74	4.66	5.58	6.50	7.42	8.34	9.25	10.17	11.09	9.19	9.19	9.19	9.19	9.19
Coyote Wash	14.96	19.11	23.26	27.41	31.56	35.71	39.86	44.01	48.16	52.31	41.50	41.50	41.50	41.50	41.50
Unnamed Trip	52.99	68.86	84.73	100.60	116.47	132.34	148.21	164.08	179.95	195.82	158.70	158.70	158.70	158.70	158.70
Total	601.60	802.28	998.85	1195.43	1392.00	1588.57	1785.14	1981.71	2178.28	2374.85	1969.82	1965.71	1965.71	1965.71	1965.71

Watershed	% Disturbed	SOIL LOSS (tons/yr)					% Natural for Max Rate
		MAX	MIN	AVERAGE	TOTAL	Natural	
Walker Hollow	1.56%	48	8	33	501	14407	0.33%
Baser	3.96%	536	126	372	5585	21536	2.49%
Antelope Draw	6.54%	579	152	402	6031	15909	3.64%
Red Wash	1.53%	64	17	44	663	8685	0.73%
Kennedy Wash	4.71%	531	134	369	5533	17894	2.97%
Green River	4.32%	326	87	226	3388	10766	3.02%
Power Springs	4.49%	32	7	22	334	944	3.39%
Cow Creek	3.92%	11	3	8	116	477	2.33%
Coyote Wash	2.91%	52	15	36	544	2766	1.89%
Unnamed Trip	3.93%	196	53	136	2038	6390	3.06%
Total		2375	602	1649	24731	99774	2.38%



WALKER HOLLOW WATERSHED ASSUMPTIONS	
CATEGORY	**ASSUMPTION**
WATERSHED AREA (acres)	6508
PADS/FACILITIES	
Slope	
1st Year	4% (Assumes 20% of pad area has slopes of 20%)
2nd Year	0 - 1 %
Management Practices	
Disturbed Areas (acres)	101.74 1.56% of the watershed
1st Year	Kill/remove vegetation, blade cut, smooth, bare (MP-1)
2nd - 3rd Year	Blade, seed, no mulch (MP-3)
4th - 15 th Year	Range grass after disturbance (MP-4)
Reclaimed Areas (acres)	19.8
1st Year	Kill/remove vegetation, blade cut, smooth, bare (MP-1)
2nd - 15th Year	Smooth bare cut (MP-2)
ROADS AND PIPELINES	
Slope*	5.30%
Management Practices	
1st Year	Kill/remove vegetation, blade cut, smooth, bare
2nd - 15th Year	Smooth, bare after disturbance

* Roads and pipelines have slopes no greater that 50% of the natural slope

ESTIMATED DISTURBANCE DUE TO DRILLING AND CONSTRUCTION ACTIVITIES IN THE WATERSHED

Walker Hollow	No. of Wells	ST DISTURBANCE					RECLAIMED AREA (acres)		LT DISTURBANCE	
		Pad (acres)	Roads (acres)	Pipelines (acres)	Dist/Well (acres)	Total (acres)	Rec/Well (acres)	Total (acres)	Acreage	Total (acres)
New Gas Wells	18	3.15	0.69	0.69	4.53	81.54	0.9	16.2	3.03	54.54
New Oil Wells	4	3.15	0.69	1.21	5.05	20.2	0.9	3.6	3.55	14.2
Gas Wells on Existing Pads	0	0	0	0.69	0.69	0	0	0	0.69	0
Oil Wells on Existing Pads	0	0	0	1.21	1.21	0	0	0	1.21	0
Central Tank Facility	0	0	0	0	3.53	0	0	0	3.53	0
Compressor Stations	0	0	0	0	1	0	0	0	1	0
Total	22	6.3	1.38	3.8	16.01	101.74	1.8	19.8	13.01	68.74

ESTIMATED SOIL LOSS DUE TO WELLS/ROADS/PIPELINES/FACILITIES BY SOIL TYPE AND MANAGEMENT PRACTICE

SOIL TYPE	AREA (acres)	AREA (%)	SOIL LOSS														
			PADS/FACILITIES								ROADS/PIPELINES				UNDISTURBED LANDS		
			MP1 1YR		MP 2 2YR-15YR		MP3 2YR-3YR		MP4 4YR-15YR		MP1 1YR		MP 2 2YR-15YR				
			Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss (t/yr)
Clay-loam	418	6.42%	0.71	0.05	0.17	0.01	0.11	0.01	0.13	0.01	1.20	0.08	1.10	0.07	2.4	0.15	1003
Loam	0	0.00%													4.2	0.00	0
Sandy-loam	2089	32.10%	0.84	0.27	0.19	0.06	0.13	0.04	0.10	0.03	1.60	0.51	1.50	0.48	3.1	1.00	6477
Silty clay-loam	487	7.48%	0.76	0.06	0.17	0.01	0.14	0.01	0.15	0.01	1.60	0.12	1.50	0.11	3.4	0.25	1656
Silty clay	3513	53.99%	0.41	0.22	0.10	0.05	0.06	0.03	0.07	0.04	0.71	0.38	0.67	0.36	1.5	0.81	5270
Sand and gravel	0	0.00%															
Total	6507	100.00%		0.59		0.14		0.09		0.09		1.09		1.03		2.21	14407

ESTIMATED SOIL LOSS FOR 10% OF WELLS/FACILITIES PER YEAR

	Pads (tons)			Roads (tons)	Gas Pipelines (tons)	Oil Pipelines (tons)	Total
	ST Disturbance	Reclaimed Disturbance	LT Disturbance				
Year 1	4.11	0.00	0.00	1.66	1.36	0.53	7.66
Year 2		0.18	0.95	1.56	1.27	0.50	4.47
Year 3		0.18	0.95	1.56	1.27	0.50	4.47
Year 4		0.18	0.95	1.56	1.27	0.50	4.47
Year 5		0.18	0.95	1.56	1.27	0.50	4.47
Year 6		0.18	0.95	1.56	1.27	0.50	4.47
Year 7		0.18	0.95	1.56	1.27	0.50	4.47
Year 8		0.18	0.95	1.56	1.27	0.50	4.47
Year 9		0.18	0.95	1.56	1.27	0.50	4.47
Year 10		0.18	0.95	1.56	1.27	0.50	4.47
Year 11		0.18	0.95	1.56	1.27	0.50	4.47
Year 12		0.18	0.95	1.56	1.27	0.50	4.47
Year 13		0.18	0.95	1.56	1.27	0.50	4.47
Year 14		0.18	0.95	1.56	1.27	0.50	4.47
Year 15		0.18	0.95	1.56	1.27	0.50	4.47

ESTIMATED SOIL LOSS BASED OF THE INSTALLATION OF WELLS AND FACILITIES AT A RATE OF 10% PER YEAR

OPERATIONAL YR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
Year 1	7.66															7.66
Year 2	7.66	4.47														12.13
Year 3	7.66	4.47	4.47													16.59
Year 4	7.66	4.47	4.47	4.47												21.06
Year 5	7.66	4.47	4.47	4.47	4.47											25.53
Year 6	7.66	4.47	4.47	4.47	4.47	4.47										29.99
Year 7	7.66	4.47	4.47	4.47	4.47	4.47	4.47									34.46
Year 8	7.66	4.47	4.47	4.47	4.47	4.47	4.47	4.47								38.93
Year 9	7.66	4.47	4.47	4.47	4.47	4.47	4.47	4.47	4.47							43.39
Year 10	7.66	4.47	4.47	4.47	4.47	4.47	4.47	4.47	4.47	4.47						47.86
Year 11		4.47	4.47	4.47	4.47	4.47	4.47	4.47	4.47	4.47	4.47					44.67
Year 12			4.47	4.47	4.47	4.47	4.47	4.47	4.47	4.47	4.47	4.47				44.67
Year 13				4.47	4.47	4.47	4.47	4.47	4.47	4.47	4.47	4.47	4.47			44.67
Year 14					4.47	4.47	4.47	4.47	4.47	4.47	4.47	4.47	4.47	4.47		44.67
Year 15						4.47	4.47	4.47	4.47	4.47	4.47	4.47	4.47	4.47	4.47	44.67

UNNAMED TRIPBUTARY TO THE GREEN RIVER ASSUMPTIONS	
CATEGORY	**ASSUMPTION**
WATERSHED AREA (acres)	9237
PADS/FACILITIES	
Slope	
1st Year	4% (Assumes 20% of pad area has slopes of 20%)
2nd Year	0 - 1 %
Management Practices	
Disturbed Areas (acres	362.96 3.93% of total watershed
1st Year	Kill/remove vegetation, blade cut, smooth, bare
2nd - 3rd Year	Blade fill, seed short prairie grass, no mulch
4th - 15 th Year	Range grass after disturbance
Reclaimed Areas (acr	70.2
1st Year	Kill/remove vegetation, blade cut, smooth, bare
2nd - 15th Year	Smooth, bare after disturbance
ROADS AND PIPELINES	
Slope*	0.00%
Management Practices	
1st Year	Kill/remove vegetation, blade cut, smooth, bare
2nd - 15th Year	Smooth, bare after disturbance

* Roads and pipelines follow the natural slope

ESTIMATED DISTURBANCE DUE TO DRILLING AND CONSTRUCTION ACTIVITIES IN THE WATERSHED

Baser	No. of Wells	ST DISTURBANCE					RECLAIMED AREA (acres)		LT DISTURBANCE	
		Pad (acres)	Roads (acres)	Pipelines (acres)	Dist/Well (acres)	Total (acres)	Rec/Well (acres)	Total (acres)	Acreage	Total (acres)
New Gas Wells	66	3.15	0.69	0.69	4.53	298.98	0.9	59.4	3.03	199.98
New Oil Wells	12	3.15	0.69	1.21	5.05	60.6	0.9	10.8	3.55	42.6
Gas Wells on Existing Pad	2	0	0	0.69	0.69	1.38	0	0	0.69	1.38
Oil Wells on Existing Pads	0	0	0	1.21	1.21	0	0	0	1.21	0
Central Tank Facility	0	0	0	0	3.53	0	0	0	3.53	0
Compressor Stations	2	0	0	0	1	2	0	0	1	2
Total	82	6.3	1.38	3.8	16.01	362.96	1.8	70.2	13.01	245.96

ESTIMATED SOIL LOSS DUE TO WELLS/ROADS/PIPELINES/FACILITIES BY SOIL TYPE AND MANAGEMENT PRACTICE

SOIL TYPE	AREA (acres)	AREA (%)	SOIL LOSS														
			PADS/FACILITIES								ROADS/PIPELINES				UNDISTURBED LANDS		
			MP1 1YR		MP 2 2YR-15YR		MP3 2YR-3YR		MP4 4YR-15YR		MP1 1YR		MP 2 2YR-15YR				
			Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss (t/yr)
Clay-loam	0	0.00%	0.71	0.00	0.17	0.00	0.11	0.00	0.13	0.00	0.76	0.00	0.72	0.00	0.56	0.00	0
Loam	675	7.31%	1.2	0.09	0.26	0.02	0.18	0.01	0.20	0.01	1.30	0.10	1.20	0.09	0.92	0.07	621
Sandy-loam	8176	88.52%	0.84	0.74	0.19	0.17	0.13	0.12	0.10	0.09	0.95	0.84	0.90	0.80	0.69	0.61	5642
Silty clay-loam	0	0.00%	0.76	0.00	0.17	0.00	0.14	0.00	0.15	0.00	0.98	0.00	0.92	0.00	0.71	0.00	0
Silty clay	385	4.17%	0.41	0.02	0.10	0.00	0.06	0.00	0.07	0.00	0.44	0.02	0.42	0.02	0.33	0.01	127
Sand and gravel	0	0.00%															
Total	9236	100.00%		0.85		0.19		0.13		0.11		0.95		0.90		0.69	6390

ESTIMATED SOIL LOSS FOR 10% OF WELLS/FACILITIES PER YEAR

	Pads (tons)			Roads (tons)	Gas Pipelines (tons)	Oil Pipelines (tons)	Total
	ST Disturbance	Reclaimed Disturbance	LT Disturbance				
Year 1	20.84	0.00	21.01	5.14	4.48	1.52	52.99
Year 2		0.92	4.68	4.85	4.11	1.31	15.87
Year 3		0.92	4.68	4.85	4.11	1.31	15.87
Year 4		0.92	4.68	4.85	4.11	1.31	15.87
Year 5		0.92	4.68	4.85	4.11	1.31	15.87
Year 6		0.92	4.68	4.85	4.11	1.31	15.87
Year 7		0.92	4.68	4.85	4.11	1.31	15.87
Year 8		0.92	4.68	4.85	4.11	1.31	15.87
Year 9		0.92	4.68	4.85	4.11	1.31	15.87
Year 10		0.92	4.68	4.85	4.11	1.31	15.87
Year 11		0.92	4.68	4.85	4.11	1.31	15.87
Year 12		0.92	4.68	4.85	4.11	1.31	15.87
Year 13		0.92	4.68	4.85	4.11	1.31	15.87
Year 14		0.92	4.68	4.85	4.11	1.31	15.87
Year 15		0.92	4.68	4.85	4.11	1.31	15.87

ESTIMATED SOIL LOSS BASED OF THE INSTALLATION OF WELLS AND FACILITIES AT A RATE OF 10% PER YEAR

OPERATIONAL YEAR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
Year 1	52.99															52.99
Year 2	52.99	15.87														68.86
Year 3	52.99	15.87	15.87													84.73
Year 4	52.99	15.87	15.87	15.87												100.60
Year 5	52.99	15.87	15.87	15.87	15.87											116.47
Year 6	52.99	15.87	15.87	15.87	15.87	15.87										132.34
Year 7	52.99	15.87	15.87	15.87	15.87	15.87	15.87									148.21
Year 8	52.99	15.87	15.87	15.87	15.87	15.87	15.87	15.87								164.08
Year 9	52.99	15.87	15.87	15.87	15.87	15.87	15.87	15.87	15.87							179.95
Year 10	52.99	15.87	15.87	15.87	15.87	15.87	15.87	15.87	15.87	15.87						195.82
Year 11		15.87	15.87	15.87	15.87	15.87	15.87	15.87	15.87	15.87	15.87					158.70
Year 12			15.87	15.87	15.87	15.87	15.87	15.87	15.87	15.87	15.87	15.87				158.70
Year 13				15.87	15.87	15.87	15.87	15.87	15.87	15.87	15.87	15.87	15.87			158.70
Year 14					15.87	15.87	15.87	15.87	15.87	15.87	15.87	15.87	15.87	15.87		158.70
Year 15						15.87	15.87	15.87	15.87	15.87	15.87	15.87	15.87	15.87	15.87	158.70

RED WASH ASSUMPTIONS	
CATEGORY	**ASSUMPTION**
WATERSHED AREA (acres)	6480
PADS/FACILITIES	
Slope	
1st Year	4% (Assumes 20% of pad area has slopes of 20%)
2nd Year	0 - 1 %
Management Practices	
Disturbed Areas (acres)	99.19 1.53% of total watershed
1st Year	Kill/remove vegetation, blade cut, smooth, bare
2nd - 3rd Year	Blade fill, seed short prairie grass, no mulch
4th - 15 th Year	Range grass after disturbance
Reclaimed Areas (acres)	18
1st Year	Kill/remove vegetation, blade cut, smooth, bare
2nd - 15th Year	Smooth, bare after disturbance
ROADS AND PIPELINES	
Slope*	5.80%
Management Practices	
1st Year	Kill/remove vegetation, blade cut, smooth, bare
2nd - 15th Year	Smooth, bare after disturbance

* Roads and pipelines follow the natural slope

ESTIMATED DISTURBANCE DUE TO DRILLING AND CONSTRUCTION ACTIVITIES IN THE WATERSHED

Baser	No. of Wells	ST DISTURBANCE					RECLAIMED AREA		LT DISTURBANCE	
		Pad (acres)	Roads (acres)	Pipelines (acres)	Dist/Well (acres)	Total (acres)	Rec/Well (acres)	Total (acres)	Acreage	Total (acres)
New Gas Wells	20	3.15	0.69	0.69	4.53	90.6	0.9	18	3.03	60.6
New Oil Wells	0	3.15	0.69	1.21	5.05	0	0.9	0	3.55	0
Gas Wells on Existing Pads	11	0	0	0.69	0.69	7.59	0	0	0.69	7.59
Oil Wells on Existing Pads	0	0	0	1.21	1.21	0	0	0	1.21	0
Central Tank Facility	0	0	0	0	3.53	0	0	0	3.53	0
Compressor Stations	1	0	0	0	1	1	0	0	1	1
Total	32	6.3	1.38	3.8	16.01	99.19	1.8	18	13.01	69.19

ESTIMATED SOIL LOSS DUE TO WELLS/ROADS/PIPELINES/FACILITIES BY SOIL TYPE AND MANAGEMENT PRACTICE

SOIL TYPE	AREA (acres)	AREA (%)	SOIL LOSS														
			PADS/FACILITIES								ROADS/PIPELINES				UNDISTURBED LANDS		
			MP1 1YR		MP 2 2YR-15YR		MP3 2YR-3YR		MP4 4YR-15YR		MP1 1YR		MP 2 2YR-15YR				
			Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss (t/yr)
Clay-loam	129	1.99%	0.71	0.01	0.17	0.00	0.11	0.00	0.13	0.00	1.40	0.03	1.30	0.03	0.99	0.02	128
Loam	1108	17.10%	1.2	0.21	0.26	0.04	0.18	0.03	0.20	0.03	2.40	0.41	2.20	0.38	1.7	0.29	1884
Sandy-loam	730	11.27%	0.84	0.09	0.19	0.02	0.13	0.01	0.10	0.01	1.80	0.20	1.70	0.19	1.2	0.14	876
Silty clay-loam	4417	68.16%	0.76	0.52	0.17	0.12	0.14	0.10	0.15	0.10	1.20	0.82	1.10	0.75	1.3	0.89	5742
Silty clay	96	1.48%	0.41	0.01	0.10	0.00	0.06	0.00	0.07	0.00	1.80	0.03	1.70	0.03	0.58	0.01	56
Sand and gravel	0	0.00%															
Total	6480	100.00%		0.84		0.19		0.14		0.15		1.49		1.37		1.34	8685

ESTIMATED SOIL LOSS FOR 10% OF WELLS/FACILITIES PER YEAR

	Pads (tons)			Roads (tons)	Gas Pipelines (tons)	Oil Pipelines (tons)	Total
	ST Disturbance	Reclaimed Disturbance	LT Disturbance				
Year 1	5.28	0.00	5.36	2.05	3.18	1.13	17.00
Year 2		0.26	1.15	1.89	1.89	0.00	5.19
Year 3		0.26	1.15	1.89	1.89	0.00	5.19
Year 4		0.26	1.15	1.89	1.89	0.00	5.19
Year 5		0.26	1.15	1.89	1.89	0.00	5.19
Year 6		0.26	1.15	1.89	1.89	0.00	5.19
Year 7		0.26	1.15	1.89	1.89	0.00	5.19
Year 8		0.26	1.15	1.89	1.89	0.00	5.19
Year 9		0.26	1.15	1.89	1.89	0.00	5.19
Year 10		0.26	1.15	1.89	1.89	0.00	5.19
Year 11		0.26	1.15	1.89	1.89	0.00	5.19
Year 12		0.26	1.15	1.89	1.89	0.00	5.19
Year 13		0.26	1.15	1.89	1.89	0.00	5.19
Year 14		0.26	1.15	1.89	1.89	0.00	5.19
Year 15		0.26	1.15	1.89	1.89	0.00	5.19

ESTIMATED SOIL LOSS BASED OF THE INSTALLATION OF WELLS AND FACILITIES AT A RATE OF 10% PER YEAR

OPERATIONAL YEAR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
Year 1	17.00															17.00
Year 2	17.00	5.19														22.18
Year 3	17.00	5.19	5.19													27.37
Year 4	17.00	5.19	5.19	5.19												32.56
Year 5	17.00	5.19	5.19	5.19	5.19											37.74
Year 6	17.00	5.19	5.19	5.19	5.19	5.19										42.93
Year 7	17.00	5.19	5.19	5.19	5.19	5.19	5.19									48.11
Year 8	17.00	5.19	5.19	5.19	5.19	5.19	5.19	5.19								53.30
Year 9	17.00	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19							58.49
Year 10	17.00	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19						63.67
Year 11		5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19					51.86
Year 12			5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19				51.86
Year 13				5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19			51.86
Year 14					5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19		51.86
Year 15						5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	5.19	51.86

POWDER SPRINGS ASSUMPTIONS	
CATEGORY	**ASSUMPTION**
WATERSHED AREA (acres)	1229
PADS/FACILITIES	
Slope	
1st Year	4% (Assumes 20% of pad area has slopes of 20%)
2nd Year	0 - 1 %
Management Practices	
Disturbed Areas (acres)	55.24 4.49% of total watershed
1st Year	Kill/remove vegetation, blade cut, smooth, bare
2nd - 3rd Year	Blade fill, seed short prairie grass, no mulch
4th - 15 th Year	Range grass after disturbance
Reclaimed Areas (acres)	9
1st Year	Kill/remove vegetation, blade cut, smooth, bare
2nd - 15th Year	Smooth, bare after disturbance
ROADS AND PIPELINES	
Slope*	0.00%
Management Practices	
1st Year	Kill/remove vegetation, blade cut, smooth, bare
2nd - 15th Year	Smooth, bare after disturbance

* Roads and pipelines follow the natural slope

ESTIMATED DISTURBANCE DUE TO DRILLING AND CONSTRUCTION ACTIVITIES IN THE WATERSHED

Baser	No. of Wells	ST DISTURBANCE					RECLAIMED AREA (acres)		LT DISTURBANCE	
		Pad (acres)	Roads (acres)	Pipelines (acres)	Dist/Well (acres)	Total (acres)	Rec/Well (acres)	Total (acres)	Acreage	Total (acres)
New Gas Wells	0	3.15	0.69	0.69	4.53	0	0.9	0	3.03	0
New Oil Wells	10	3.15	0.69	1.21	5.05	50.5	0.9	9	3.55	35.5
Gas Wells on Existing Pads	0	0	0	0.69	0.69	0	0	0	0.69	0
Oil Wells on Existing Pads	1	0	0	1.21	1.21	1.21	0	0	1.21	1.21
Central Tank Facility	1	0	0	0	3.53	3.53	0	0	3.53	3.53
Compressor Stations	0	0	0	0	1	0	0	0	1	0
Total	12	6.3	1.38	3.8	16.01	55.24	1.8	9	13.01	40.24

ESTIMATED SOIL LOSS DUE TO WELLS/ROADS/PIPELINES/FACILITIES BY SOIL TYPE AND MANAGEMENT PRACTICE

SOIL TYPE	AREA (acres)	AREA (%)	SOIL LOSS														
			PADS/FACILITIES								ROADS/PIPELINES				UNDISTURBED LANDS		
			MP1 1YR		MP 2 2YR-15YR		MP3 2YR-3YR		MP4 4YR-15YR		MP1 1YR		MP 2 2YR-15YR				
			Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss (t/yr)
Clay-loam	0	0.00%	0.71	0.00	0.17	0.00	0.11	0.00	0.13	0.00	0.80	0.00	0.76	0.00	0.59	0.00	0
Loam	102	8.30%	1.2	0.10	0.26	0.02	0.18	0.01	0.20	0.02	1.40	0.12	1.30	0.11	0.99	0.08	101
Sandy-loam	102	8.30%	0.84	0.07	0.19	0.02	0.13	0.01	0.10	0.01	1.00	0.08	0.95	0.08	0.73	0.06	74
Silty clay-loam	1025	83.40%	0.76	0.63	0.17	0.14	0.14	0.12	0.15	0.13	1.00	0.83	0.98	0.82	0.75	0.63	769
Silty clay	0	0.00%	0.41	0.00	0.10	0.00	0.06	0.00	0.07	0.00	0.47	0.00	0.44	0.00	0.34	0.00	0
Sand and gravel	0	0.00%															
Total	1229	100.00%		0.80		0.18		0.14		0.15		1.03		1.00		0.77	944

ESTIMATED SOIL LOSS FOR 10% OF WELLS/FACILITIES PER YEAR

	Pads (tons)			Roads (tons)	Gas Pipelines (tons)	Oil Pipelines (tons)	Total
	ST Disturbance	Reclaimed Disturbance	LT Disturbance				
Year 1	2.53	0.00	2.81	0.71	0.00	1.25	7.31
Year 2		0.13	0.70	0.69	0.00	1.34	2.86
Year 3		0.13	0.70	0.69	0.00	1.21	2.74
Year 4		0.13	0.70	0.69	0.00	1.21	2.74
Year 5		0.13	0.70	0.69	0.00	1.21	2.74
Year 6		0.13	0.70	0.69	0.00	1.21	2.74
Year 7		0.13	0.70	0.69	0.00	1.21	2.74
Year 8		0.13	0.70	0.69	0.00	1.21	2.74
Year 9		0.13	0.70	0.69	0.00	1.21	2.74
Year 10		0.13	0.70	0.69	0.00	1.21	2.74
Year 11		0.13	0.70	0.69	0.00	1.21	2.74
Year 12		0.13	0.70	0.69	0.00	1.21	2.74
Year 13		0.13	0.70	0.69	0.00	1.21	2.74
Year 14		0.13	0.70	0.69	0.00	1.21	2.74
Year 15		0.13	0.70	0.69	0.00	1.21	2.74

ESTIMATED SOIL LOSS BASED OF THE INSTALLATION OF WELLS AND FACILITIES AT A RATE OF 10% PER YEAR

OPERATIONAL YEAR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
Year 1	7.31															7.31
Year 2	7.31	2.86														10.16
Year 3	7.31	2.86	2.74													12.90
Year 4	7.31	2.86	2.74	2.74												15.63
Year 5	7.31	2.86	2.74	2.74	2.74											18.37
Year 6	7.31	2.86	2.74	2.74	2.74	2.74										21.10
Year 7	7.31	2.86	2.74	2.74	2.74	2.74	2.74									23.84
Year 8	7.31	2.86	2.74	2.74	2.74	2.74	2.74	2.74								26.57
Year 9	7.31	2.86	2.74	2.74	2.74	2.74	2.74	2.74	2.74							29.31
Year 10	7.31	2.86	2.74	2.74	2.74	2.74	2.74	2.74	2.74	2.74						32.04
Year 11		2.86	2.74	2.74	2.74	2.74	2.74	2.74	2.74	2.74	2.74					27.47
Year 12			2.74	2.74	2.74	2.74	2.74	2.74	2.74	2.74	2.74	2.74				27.35
Year 13				2.74	2.74	2.74	2.74	2.74	2.74	2.74	2.74	2.74	2.74			27.35
Year 14					2.74	2.74	2.74	2.74	2.74	2.74	2.74	2.74	2.74	2.74		27.35
Year 15						2.74	2.74	2.74	2.74	2.74	2.74	2.74	2.74	2.74	2.74	27.35

KENNEDY WASH ASSUMPTIONS	
CATEGORY	**ASSUMPTION**
WATERSHED AREA (acres)	21324
PADS/FACILITIES	
Slope	
1st Year	4% (Assumes 20% of pad area has slopes of 20%)
2nd Year	0 - 1 %
Management Practices	
Disturbed Areas (acres)	1004.34 4.71% of total watershed
1st Year	Kill/remove vegetation, blade cut, smooth, bare
2nd - 3rd Year	Blade fill, seed short prairie grass, no mulch
4th - 15 th Year	Range grass after disturbance
Reclaimed Areas (acres)	189
1st Year	Kill/remove vegetation, blade cut, smooth, bare
2nd - 15th Year	Smooth, bare after disturbance
ROADS AND PIPELINES	
Slope*	4.60%
Management Practices	
1st Year	Kill/remove vegetation, blade cut, smooth, bare
2nd - 15th Year	Smooth, bare after disturbance

* Roads and pipelines follow the natural slope

ESTIMATED DISTURBANCE DUE TO DRILLING AND CONSTRUCTION ACTIVITIES IN THE WATERSHEI

Baser	No. of Wells	ST DISTURBANCE					RECLAIMED AREA (acres)		LT DISTURBANCE	
		Pad (acres)	Roads (acres)	Pipelines (acres)	Dist/Well (acres)	Total (acres)	Rec/Well (acres)	Total (acres)	Acreage	Total (acres)
New Gas Wells	155	3.15	0.69	0.69	4.53	702.15	0.9	139.5	3.03	469.65
New Oil Wells	55	3.15	0.69	1.21	5.05	277.75	0.9	49.5	3.55	195.25
Gas Wells on Existing Pads	22	0	0	0.69	0.69	15.18	0	0	0.69	15.18
Oil Wells on Existing Pads	6	0	0	1.21	1.21	7.26	0	0	1.21	7.26
Central Tank Facility	0	0	0	0	3.53	0	0	0	3.53	0
Compressor Stations	2	0	0	0	1	2	0	0	1	2
Total	240	6.3	1.38	3.8	16.01	1004.34	1.8	189	13.01	689.34

ESTIMATED SOIL LOSS DUE TO WELLS/ROADS/PIPELINES/FACILITIES BY SOIL TYPE AND MANAGEMENT PRACTIC

SOIL TYPE	AREA (acres)	AREA (%)	SOIL LOSS														
			PADS/FACILITIES								ROADS/PIPELINES				UNDISTURBED LANDS		
			MP1 1YR		MP 2 2YR-15YR		MP3 2YR-3YR		MP4 4YR-15YR		MP1 1YR		MP 2 2YR-15YR				
			Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss (t/yr)
Clay-loam	0	0.00%	0.71	0.00	0.17	0.00	0.11	0.00	0.13	0.00	1.00	0.00	0.96	0.00	0.75	0.00	0
Loam	1228	5.76%	1.2	0.07	0.26	0.01	0.18	0.01	0.20	0.01	1.70	0.10	1.60	0.09	1.2	0.07	1474
Sandy-loam	8497	39.85%	0.84	0.33	0.19	0.08	0.13	0.05	0.10	0.04	1.30	0.52	1.20	0.48	0.92	0.37	7817
Silty clay-loam	6954	32.61%	0.76	0.25	0.17	0.06	0.14	0.05	0.15	0.05	0.87	0.28	0.82	0.27	0.95	0.31	6606
Silty clay	4646	21.79%	0.41	0.09	0.10	0.02	0.06	0.01	0.07	0.02	0.60	0.13	0.56	0.12	0.43	0.09	1998
Sand and gravel	0	0.00%															
Total	21325	100.00%		0.74		0.17		0.12		0.12		1.03		0.96		0.84	17894

ESTIMATED SOIL LOSS FOR 10% OF WELLS/FACILITIES PER YEAF

	Pads (tons)			Roads (tons)	Gas Pipelines (tons)	Oil Pipelines (tons)	Total
	ST Disturbance	Reclaimed Disturbance	LT Disturbance				
Year 1	49.01	0.00	49.16	14.93	12.58	8.42	134.11
Year 2		2.30	11.20	13.91	10.26	7.08	44.75
Year 3		2.30	11.20	13.91	10.26	6.39	44.05
Year 4		2.30	11.20	13.91	10.26	6.39	44.05
Year 5		2.30	11.20	13.91	10.26	6.39	44.05
Year 6		2.30	11.20	13.91	10.26	6.39	44.05
Year 7		2.30	11.20	13.91	10.26	6.39	44.05
Year 8		2.30	11.20	13.91	10.26	6.39	44.05
Year 9		2.30	11.20	13.91	10.26	6.39	44.05
Year 10		2.30	11.20	13.91	10.26	6.39	44.05
Year 11		2.30	11.20	13.91	10.26	6.39	44.05
Year 12		2.30	11.20	13.91	10.26	6.39	44.05
Year 13		2.30	11.20	13.91	10.26	6.39	44.05
Year 14		2.30	11.20	13.91	10.26	6.39	44.05
Year 15		2.30	11.20	13.91	10.26	6.39	44.05

ESTIMATED SOIL LOSS BASED OF THE INSTALLATION OF WELLS AND FACILITIES AT A RATE OF 10% PER YEA

OPERATIONAL YEAR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
Year 1	134.11															134.11
Year 2	134.11	44.75														178.86
Year 3	134.11	44.75	44.05													222.91
Year 4	134.11	44.75	44.05	44.05												266.96
Year 5	134.11	44.75	44.05	44.05	44.05											311.01
Year 6	134.11	44.75	44.05	44.05	44.05	44.05										355.06
Year 7	134.11	44.75	44.05	44.05	44.05	44.05	44.05									399.11
Year 8	134.11	44.75	44.05	44.05	44.05	44.05	44.05	44.05								443.16
Year 9	134.11	44.75	44.05	44.05	44.05	44.05	44.05	44.05	44.05							487.21
Year 10	134.11	44.75	44.05	44.05	44.05	44.05	44.05	44.05	44.05	44.05						531.26
Year 11		44.75	44.05	44.05	44.05	44.05	44.05	44.05	44.05	44.05	44.05					441.20
Year 12			44.05	44.05	44.05	44.05	44.05	44.05	44.05	44.05	44.05	44.05				440.51
Year 13				44.05	44.05	44.05	44.05	44.05	44.05	44.05	44.05	44.05	44.05			440.51
Year 14					44.05	44.05	44.05	44.05	44.05	44.05	44.05	44.05	44.05	44.05		440.51
Year 15						44.05	44.05	44.05	44.05	44.05	44.05	44.05	44.05	44.05	44.05	440.51

DIRECT SEDIMENTION INTO GREEN RIVER ASSUMPTIONS	
CATEGORY	**ASSUMPTION**
WATERSHED AREA (acres)	15944
PADS/FACILITIES	
Slope	
1st Year	4% (Assumes 20% of pad area has slopes of 20%)
2nd Year	0 - 1 %
Management Practices	
Disturbed Areas (acres)	688.07 4.32% of total watershed
1st Year	Kill/remove vegetation, blade cut, smooth, bare
2nd - 3rd Year	Blade fill, seed short prairie grass, no mulch
4th - 15 th Year	Range grass after disturbance
Reclaimed Areas (acres)	129.6
1st Year	Kill/remove vegetation, blade cut, smooth, bare
2nd - 15th Year	Smooth, bare after disturbance
ROADS AND PIPELINES	
Slope*	0.00%
Management Practices	
1st Year	Kill/remove vegetation, blade cut, smooth, bare
2nd - 15th Year	Smooth, bare after disturbance

* Roads and pipelines follow the natural slope

ESTIMATED DISTURBANCE DUE TO DRILLING AND CONSTRUCTION ACTIVITIES IN THE WATERSHEI

Baser	No. of Wells	ST DISTURBANCE					RECLAIMED AREA (acres)		LT DISTURBANCE	
		Pad (acres)	Roads (acres)	Pipelines (acres)	Dist/Well (acres)	Total (acres)	Rec/Well (acres)	Total (acres)	Acreage	Total (acres)
New Gas Wells	129	3.15	0.69	0.69	4.53	584.37	0.9	116.1	3.03	390.87
New Oil Wells	15	3.15	0.69	1.21	5.05	75.75	0.9	13.5	3.55	53.25
Gas Wells on Existing Pads	18	0	0	0.69	0.69	12.42	0	0	0.69	12.42
Oil Wells on Existing Pads	7	0	0	1.21	1.21	8.47	0	0	1.21	8.47
Central Tank Facility	2	0	0	0	3.53	7.06	0	0	3.53	7.06
Compressor Stations	0	0	0	0	1	0	0	0	1	0
Total	171	6.3	1.38	3.8	16.01	688.07	1.8	129.6	13.01	472.07

ESTIMATED SOIL LOSS DUE TO WELLS/ROADS/PIPELINES/FACILITIES BY SOIL TYPE AND MANAGEMENT PRACTIC

SOIL TYPE	AREA (acres)	AREA (%)	SOIL LOSS														
			PADS/FACILITIES								ROADS/PIPELINES				UNDISTURBED LANDS		
			MP1 1YR		MP 2 2YR-15YR		MP3 2YR-3YR		MP4 4YR-15YR		MP1 1YR		MP 2 2YR-15YR				
			Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss (t/yr)
Clay-loam	146	0.92%	0.71	0.01	0.17	0.00	0.11	0.00	0.13	0.00	0.88	0.01	0.83	0.01	0.65	0.01	95
Loam	2756	17.30%	1.2	0.21	0.26	0.04	0.18	0.03	0.20	0.03	1.50	0.26	1.40	0.24	1.1	0.19	3034
Sandy-loam	6451	40.50%	0.84	0.34	0.19	0.08	0.13	0.05	0.10	0.04	1.10	0.45	1.00	0.40	0.8	0.32	5165
Silty clay-loam	72	0.45%	0.76	0.00	0.17	0.00	0.14	0.00	0.15	0.00	1.10	0.00	1.10	0.00	0.82	0.00	59
Silty clay	6343	39.82%	0.41	0.16	0.10	0.04	0.06	0.03	0.07	0.03	0.51	0.20	0.48	0.19	0.38	0.15	2412
Sand and gravel	162	1.02%															
Total	15930	100.00%		0.72		0.16		0.11		0.10		0.92		0.85		0.68	10766

ESTIMATED SOIL LOSS FOR 10% OF WELLS/FACILITIES PER YEAF

	Pads (tons)			Roads (tons)	Gas Pipelines (tons)	Oil Pipelines (tons)	Total
	ST Disturbance	Reclaimed Disturbance	LT Disturbance				
Year 1	32.70	0.00	33.21	9.15	9.34	2.82	87.23
Year 2		1.43	7.40	8.45	7.57	2.27	27.13
Year 3		1.43	7.40	8.45	7.57	1.54	26.41
Year 4		1.43	7.40	8.45	7.57	1.54	26.41
Year 5		1.43	7.40	8.45	7.57	1.54	26.41
Year 6		1.43	7.40	8.45	7.57	1.54	26.41
Year 7		1.43	7.40	8.45	7.57	1.54	26.41
Year 8		1.43	7.40	8.45	7.57	1.54	26.41
Year 9		1.43	7.40	8.45	7.57	1.54	26.41
Year 10		1.43	7.40	8.45	7.57	1.54	26.41
Year 11		1.43	7.40	8.45	7.57	1.54	26.41
Year 12		1.43	7.40	8.45	7.57	1.54	26.41
Year 13		1.43	7.40	8.45	7.57	1.54	26.41
Year 14		1.43	7.40	8.45	7.57	1.54	26.41
Year 15		1.43	7.40	8.45	7.57	1.54	26.41

ESTIMATED SOIL LOSS BASED OF THE INSTALLATION OF WELLS AND FACILITIES AT A RATE OF 10% PER YEA

OPERATIONAL YEAR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
Year 1	87.23															87.23
Year 2	87.23	27.13														114.35
Year 3	87.23	27.13	26.41													140.76
Year 4	87.23	27.13	26.41	26.41												167.17
Year 5	87.23	27.13	26.41	26.41	26.41											193.57
Year 6	87.23	27.13	26.41	26.41	26.41	26.41										219.98
Year 7	87.23	27.13	26.41	26.41	26.41	26.41	26.41									246.39
Year 8	87.23	27.13	26.41	26.41	26.41	26.41	26.41	26.41								272.79
Year 9	87.23	27.13	26.41	26.41	26.41	26.41	26.41	26.41	26.41							299.20
Year 10	87.23	27.13	26.41	26.41	26.41	26.41	26.41	26.41	26.41	26.41						325.61
Year 11		27.13	26.41	26.41	26.41	26.41	26.41	26.41	26.41	26.41	26.41					264.79
Year 12			26.41	26.41	26.41	26.41	26.41	26.41	26.41	26.41	26.41	26.41				264.07
Year 13				26.41	26.41	26.41	26.41	26.41	26.41	26.41	26.41	26.41	26.41			264.07
Year 14					26.41	26.41	26.41	26.41	26.41	26.41	26.41	26.41	26.41	26.41		264.07
Year 15						26.41	26.41	26.41	26.41	26.41	26.41	26.41	26.41	26.41	26.41	264.07

COYOTE WASH ASSUMPTIONS	
CATEGORY	**ASSUMPTION**
WATERSHED AREA (acres)	3755
PADS/FACILITIES	
Slope	
1st Year	4% (Assumes 20% of pad area has slopes of 20%)
2nd Year	0 - 1 %
Management Practices	
Disturbed Areas (acres)	109.32 2.91% of total watershed
1st Year	Kill/remove vegetation, blade cut, smooth, bare
2nd - 3rd Year	Blade fill, seed short prairie grass, no mulch
4th - 15 th Year	Range grass after disturbance
Reclaimed Areas (acres)	19.8
1st Year	Kill/remove vegetation, blade cut, smooth, bare
2nd - 15th Year	Smooth, bare after disturbance
ROADS AND PIPELINES	
Slope*	0.00%
Management Practices	
1st Year	Kill/remove vegetation, blade cut, smooth, bare
2nd - 15th Year	Smooth, bare after disturbance

* Roads and pipelines follow the natural slope

ESTIMATED DISTURBANCE DUE TO DRILLING AND CONSTRUCTION ACTIVITIES IN THE WATERSHED

Baser	No. of Wells	ST DISTURBANCE					RECLAIMED AREA (acres)		LT DISTURBANCE	
		Pad (acres)	Roads (acres)	Pipelines (acres)	Dist/Well (acres)	Total (acres)	Rec/Well (acres)	Total (acres)	Acreage	Total (acres)
New Gas Wells	22	3.15	0.69	0.69	4.53	99.66	0.9	19.8	3.03	66.66
New Oil Wells	0	3.15	0.69	1.21	5.05	0	0.9	0	3.55	0
Gas Wells on Existing Pads	14	0	0	0.69	0.69	9.66	0	0	0.69	9.66
Oil Wells on Existing Pads	0	0	0	1.21	1.21	0	0	0	1.21	0
Central Tank Facility	0	0	0	0	3.53	0	0	0	3.53	0
Compressor Stations	0	0	0	0	1	0	0	0	1	0
Total	36	6.3	1.38	3.8	16.01	109.32	1.8	19.8	13.01	76.32

ESTIMATED SOIL LOSS DUE TO WELLS/ROADS/PIPELINES/FACILITIES BY SOIL TYPE AND MANAGEMENT PRACTICE

SOIL TYPE	AREA (acres)	AREA (%)	SOIL LOSS														
			PADS/FACILITIES								ROADS/PIPELINES				UNDISTURBED LANDS		
			MP1 1YR		MP 2 2YR-15YR		MP3 2YR-3YR		MP4 4YR-15YR		MP1 1YR		MP 2 2YR-15YR				
			Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss (t/yr)
Clay-loam	0	0.00%	0.71	0.00	0.17	0.00	0.11	0.00	0.13	0.00	0.96	0.00	0.91	0.00	0.71	0.00	0
Loam	47	1.25%	1.2	0.02	0.26	0.00	0.18	0.00	0.20	0.00	1.60	0.02	1.50	0.02	1.2	0.02	56
Sandy-loam	2585	68.86%	0.84	0.58	0.19	0.13	0.13	0.09	0.10	0.07	1.20	0.83	1.10	0.76	0.87	0.60	2250
Silty clay-loam	0	0.00%	0.76	0.00	0.17	0.00	0.14	0.00	0.15	0.00	0.82	0.00	0.77	0.00	0.89	0.00	0
Silty clay	1122	29.89%	0.41	0.12	0.10	0.03	0.06	0.02	0.07	0.02	0.56	0.17	0.53	0.16	0.41	0.12	460
Sand and gravel	0	0.00%															
Total	3754	100.00%		0.72		0.16		0.11		0.09		1.01		0.93		0.74	2766

ESTIMATED SOIL LOSS FOR 10% OF WELLS/FACILITIES PER YEAR

	Pads (tons)			Roads (tons)	Gas Pipelines (tons)	Oil Pipelines (tons)	Total
	ST Disturbance	Reclaimed Disturbance	LT Disturbance				
Year 1	4.96	0.00	4.96	1.54	2.52	0.98	14.96
Year 2		0.22	1.09	1.42	1.42	0.00	4.15
Year 3		0.22	1.09	1.42	1.42	0.00	4.15
Year 4		0.22	1.09	1.42	1.42	0.00	4.15
Year 5		0.22	1.09	1.42	1.42	0.00	4.15
Year 6		0.22	1.09	1.42	1.42	0.00	4.15
Year 7		0.22	1.09	1.42	1.42	0.00	4.15
Year 8		0.22	1.09	1.42	1.42	0.00	4.15
Year 9		0.22	1.09	1.42	1.42	0.00	4.15
Year 10		0.22	1.09	1.42	1.42	0.00	4.15
Year 11		0.22	1.09	1.42	1.42	0.00	4.15
Year 12		0.22	1.09	1.42	1.42	0.00	4.15
Year 13		0.22	1.09	1.42	1.42	0.00	4.15
Year 14		0.22	1.09	1.42	1.42	0.00	4.15
Year 15		0.22	1.09	1.42	1.42	0.00	4.15

ESTIMATED SOIL LOSS BASED OF THE INSTALLATION OF WELLS AND FACILITIES AT A RATE OF 10% PER YEAR

OPERATIONAL YEAR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
Year 1	14.96															14.96
Year 2	14.96	4.15														19.11
Year 3	14.96	4.15	4.15													23.26
Year 4	14.96	4.15	4.15	4.15												27.41
Year 5	14.96	4.15	4.15	4.15	4.15											31.56
Year 6	14.96	4.15	4.15	4.15	4.15	4.15										35.71
Year 7	14.96	4.15	4.15	4.15	4.15	4.15	4.15									39.86
Year 8	14.96	4.15	4.15	4.15	4.15	4.15	4.15	4.15								44.01
Year 9	14.96	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15							48.16
Year 10	14.96	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15						52.31
Year 11		4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15					41.50
Year 12			4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15				41.50
Year 13				4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15			41.50
Year 14					4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15		41.50
Year 15						4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	4.15	41.50

COW CREEK ASSUMPTIONS	
CATEGORY	**ASSUMPTION**
WATERSHED AREA (acres)	605
PADS/FACILITIES	
Slope	
1st Year	4% (Assumes 20% of pad area has slopes of 20%)
2nd Year	0 - 1 %
Management Practices	
Disturbed Areas (acres)	23.73 3.92% of total watershed
1st Year	Kill/remove vegetation, blade cut, smooth, bare
2nd - 3rd Year	Blade fill, seed short prairie grass, no mulch
4th - 15 th Year	Range grass after disturbance
Reclaimed Areas (acres)	3.6
1st Year	Kill/remove vegetation, blade cut, smooth, bare
2nd - 15th Year	Smooth, bare after disturbance
ROADS AND PIPELINES	
Slope*	0.00%
Management Practices	
1st Year	Kill/remove vegetation, blade cut, smooth, bare
2nd - 15th Year	Smooth, bare after disturbance

* Roads and pipelines follow the natural slope

ESTIMATED DISTURBANCE DUE TO DRILLING AND CONSTRUCTION ACTIVITIES IN THE WATERSHED

Baser	No. of Wells	ST DISTURBANCE					RECLAIMED AREA (acres)		LT DISTURBANCE	
		Pad (acres)	Roads (acres)	Pipelines (acres)	Dist/Well (acres)	Total (acres)	Rec/Well (acres)	Total (acres)	Acreage	Total (acres)
New Gas Wells	0	3.15	0.69	0.69	4.53	0	0.9	0	3.03	0
New Oil Wells	4	3.15	0.69	1.21	5.05	20.2	0.9	3.6	3.55	14.2
Gas Wells on Existing Pads	0	0	0	0.69	0.69	0	0	0	0.69	0
Oil Wells on Existing Pads	0	0	0	1.21	1.21	0	0	0	1.21	0
Central Tank Facility	1	0	0	0	3.53	3.53	0	0	3.53	3.53
Compressor Stations	0	0	0	0	1	0	0	0	1	0
Total	5	6.3	1.38	3.8	16.01	23.73	1.8	3.6	13.01	17.73

ESTIMATED SOIL LOSS DUE TO WELLS/ROADS/PIPELINES/FACILITIES BY SOIL TYPE AND MANAGEMENT PRACTICE

SOIL TYPE	AREA (acres)	AREA (%)	SOIL LOSS														
			PADS/FACILITIES								ROADS/PIPELINES				UNDISTURBED LANDS		
			MP1 1YR		MP 2 2YR-15YR		MP3 2YR-3YR		MP4 4YR-15YR		MP1 1YR		MP 2 2YR-15YR				
			Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss (t/yr)
Clay-loam	0	0.00%	0.71	0.00	0.17	0.00	0.11	0.00	0.13	0.00	0.86	0.00	0.81	0.00	0.64	0.00	0
Loam	0	0.00%	1.2	0.00	0.26	0.00	0.18	0.00	0.20	0.00	1.50	0.00	1.40	0.00	1.1	0.00	0
Sandy-loam	97	16.06%	0.84	0.13	0.19	0.03	0.13	0.02	0.10	0.02	1.10	0.18	1.00	0.16	0.78	0.13	76
Silty clay-loam	507	83.94%	0.76	0.64	0.17	0.14	0.14	0.12	0.15	0.13	0.73	0.61	0.69	0.58	0.79	0.66	401
Silty clay	0	0.00%	0.41	0.00	0.10	0.00	0.06	0.00	0.07	0.00	0.50	0.00	0.47	0.00	0.37	0.00	0
Sand and gravel	0	0.00%															
Total	604	100.00%		0.77		0.17		0.14		0.14		0.79		0.74		0.79	477

ESTIMATED SOIL LOSS FOR 10% OF WELLS/FACILITIES PER YEAR

	Pads (tons)			Roads (tons)	Gas Pipelines (tons)	Oil Pipelines (tons)	Total
	ST Disturbance	Reclaimed Disturbance	LT Disturbance				
Year 1	0.97	0.00	1.25	0.22	0.00	0.38	2.82
Year 2		0.05	0.31	0.20	0.00	0.36	0.92
Year 3		0.05	0.31	0.20	0.00	0.36	0.92
Year 4		0.05	0.31	0.20	0.00	0.36	0.92
Year 5		0.05	0.31	0.20	0.00	0.36	0.92
Year 6		0.05	0.31	0.20	0.00	0.36	0.92
Year 7		0.05	0.31	0.20	0.00	0.36	0.92
Year 8		0.05	0.31	0.20	0.00	0.36	0.92
Year 9		0.05	0.31	0.20	0.00	0.36	0.92
Year 10		0.05	0.31	0.20	0.00	0.36	0.92
Year 11		0.05	0.31	0.20	0.00	0.36	0.92
Year 12		0.05	0.31	0.20	0.00	0.36	0.92
Year 13		0.05	0.31	0.20	0.00	0.36	0.92
Year 14		0.05	0.31	0.20	0.00	0.36	0.92
Year 15		0.05	0.31	0.20	0.00	0.36	0.92

ESTIMATED SOIL LOSS BASED OF THE INSTALLATION OF WELLS AND FACILITIES AT A RATE OF 10% PER YEAR

OPERATIONAL YEAR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
Year 1	2.82															2.82
Year 2	2.82	0.92														3.74
Year 3	2.82	0.92	0.92													4.66
Year 4	2.82	0.92	0.92	0.92												5.58
Year 5	2.82	0.92	0.92	0.92	0.92											6.50
Year 6	2.82	0.92	0.92	0.92	0.92	0.92										7.42
Year 7	2.82	0.92	0.92	0.92	0.92	0.92	0.92									8.34
Year 8	2.82	0.92	0.92	0.92	0.92	0.92	0.92	0.92								9.25
Year 9	2.82	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92							10.17
Year 10	2.82	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92						11.09
Year 11		0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92					9.19
Year 12			0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92				9.19
Year 13				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			9.19
Year 14					0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		9.19
Year 15						0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	9.19

ANTELOPE DRAW ASSUMPTIONS	
CATEGORY	**ASSUMPTION**
WATERSHED AREA	17885
PADS/FACILITIES	
Slope	
1st Year	4% (Assumes 20% of pad area has slopes of 20%)
2nd Year	0 - 1 %
Management Practices	
Disturbed Areas (acres)	1169.22 6.54% of total watershed
1st Year	Kill/remove vegetation, blade cut, smooth, bare
2nd - 3rd Year	Blade fill, seed short prairie grass, no mulch
4th - 15 th Year	Range grass after disturbance
Reclaimed Areas (acres)	194.4
1st Year	Kill/remove vegetation, blade cut, smooth, bare
2nd - 15th Year	Smooth, bare after disturbance
ROADS AND PIPELINES	
Slope*	6.10%
Management Practices	
1st Year	Kill/remove vegetation, blade cut, smooth, bare
2nd - 15th Year	Smooth, bare after disturbance

* Roads and pipelines follow the natural slope

ESTIMATED DISTURBANCE DUE TO DRILLING AND CONSTRUCTION ACTIVITIES IN THE WATERSHE

Baser	No. of Wells	ST DISTURBANCE					RECLAIMED AREA (acres)		LT DISTURBANCE	
		Pad (acres)	Roads (acres)	Pipelines (acres)	Dist/Well (acres)	Total (acres)	Rec/Well (acres)	Total (acres)	Acreage	Total (acres)
New Gas Wells	176	3.15	0.69	0.69	4.53	797.28	0.9	158.4	3.03	533.28
New Oil Wells	40	3.15	0.69	1.21	5.05	202	0.9	36	3.55	142
Gas Wells on Existing Pads	206	0	0	0.69	0.69	142.14	0	0	0.69	142.14
Oil Wells on Existing Pads	8	0	0	1.21	1.21	9.68	0	0	1.21	9.68
Central Tank Facility	4	0	0	0	3.53	14.12	0	0	3.53	14.12
Compressor Stations	4	0	0	0	1	4	0	0	1	4
Total	438	6.3	1.38	3.8	16.01	1169.22	1.8	194.4	13.01	845.22

ESTIMATED SOIL LOSS DUE TO WELLS/ROADS/PIPELINES/FACILITIES BY SOIL TYPE AND MANAGEMENT PRACTIC

SOIL TYPE	AREA (acres)	AREA (%)	SOIL LOSS														
			PADS/FACILITIES								ROADS/PIPELINES				UNDISTURBED LANDS		
			MP1 1YR		MP 2 2YR-15YR		MP3 2YR-3YR		MP4 4YR-15YR		MP1 1YR		MP 2 2YR-15YR				
			Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss (t/yr)
Clay-loam	197	1.10%	0.71	0.01	0.17	0.00	0.11	0.00	0.13	0.00	1.50	0.02	1.40	0.02	1.1	0.01	217
Loam	640	3.59%	1.2	0.04	0.26	0.01	0.18	0.01	0.20	0.01	2.50	0.09	2.40	0.09	1.8	0.06	1155
Sandy-loam	4312	24.16%	0.84	0.20	0.19	0.05	0.13	0.03	0.10	0.02	1.90	0.46	1.80	0.43	1.3	0.31	5618
Silty clay-loam	1318	7.39%	0.76	0.06	0.17	0.01	0.14	0.01	0.15	0.01	1.30	0.10	1.20	0.09	1.4	0.10	1849
Silty clay	11378	63.76%	0.41	0.26	0.10	0.06	0.06	0.04	0.07	0.05	0.86	0.55	0.81	0.52	0.62	0.40	7070
Sand and gravel	0	0.00%															
Total	17845	100.00%		0.57		0.13		0.09		0.09		1.21		1.14		0.89	15909

ESTIMATED SOIL LOSS FOR 10% OF WELLS/FACILITIES PER YEAF

	Pads (tons)			Roads (tons)	Gas Pipelines (tons)	Oil Pipelines (tons)	Total
	ST Disturbance	Reclaimed Disturbance	LT Disturbance				
Year 1	38.88	0.00	39.91	18.03	31.88	23.05	151.75
Year 2		1.74	9.25	17.01	13.86	6.63	48.50
Year 3		1.74	9.25	17.01	13.86	5.53	47.40
Year 4		1.74	9.25	17.01	13.86	5.53	47.40
Year 5		1.74	9.25	17.01	13.86	5.53	47.40
Year 6		1.74	9.25	17.01	13.86	5.53	47.40
Year 7		1.74	9.25	17.01	13.86	5.53	47.40
Year 8		1.74	9.25	17.01	13.86	5.53	47.40
Year 9		1.74	9.25	17.01	13.86	5.53	47.40
Year 10		1.74	9.25	17.01	13.86	5.53	47.40
Year 11		1.74	9.25	17.01	13.86	5.53	47.40
Year 12		1.74	9.25	17.01	13.86	5.53	47.40
Year 13		1.74	9.25	17.01	13.86	5.53	47.40
Year 14		1.74	9.25	17.01	13.86	5.53	47.40
Year 15		1.74	9.25	17.01	13.86	5.53	47.40

ESTIMATED SOIL LOSS BASED OF THE INSTALLATION OF WELLS AND FACILITIES AT A RATE OF 10% PER YEA

OPERATIONAL YEAR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
Year 1	151.75															151.75
Year 2	151.75	48.50														200.26
Year 3	151.75	48.50	47.40													247.65
Year 4	151.75	48.50	47.40	47.40												295.05
Year 5	151.75	48.50	47.40	47.40	47.40											342.44
Year 6	151.75	48.50	47.40	47.40	47.40	47.40										389.84
Year 7	151.75	48.50	47.40	47.40	47.40	47.40	47.40									437.23
Year 8	151.75	48.50	47.40	47.40	47.40	47.40	47.40	47.40								484.63
Year 9	151.75	48.50	47.40	47.40	47.40	47.40	47.40	47.40	47.40							532.03
Year 10	151.75	48.50	47.40	47.40	47.40	47.40	47.40	47.40	47.40	47.40						579.42
Year 11		48.50	47.40	47.40	47.40	47.40	47.40	47.40	47.40	47.40	47.40					475.06
Year 12			47.40	47.40	47.40	47.40	47.40	47.40	47.40	47.40	47.40	47.40				473.96
Year 13				47.40	47.40	47.40	47.40	47.40	47.40	47.40	47.40	47.40	47.40			473.96
Year 14					47.40	47.40	47.40	47.40	47.40	47.40	47.40	47.40	47.40	47.40		473.96
Year 15						47.40	47.40	47.40	47.40	47.40	47.40	47.40	47.40	47.40	47.40	473.96

BASER ASSUMPTIONS	
CATEGORY	**ASSUMPTION**
WATERSHED AREA (acres)	18812
PADS/FACILITIES	
Slope	
1st Year	4% (Assumes 20% of pad area has slopes of 20%)
2nd Year	0 - 1 %
Management Practices	
Disturbed Areas (acres)	744.38 3.96% of total watershed
1st Year	Kill/remove vegetation, blade cut, smooth, bare
2nd - 3rd Year	Blade fill, seed short prairie grass, no mulch
4th - 15 th Year	Range grass after disturbance
Reclaimed Areas (acres)	136.8
1st Year	Kill/remove vegetation, blade cut, smooth, bare
2nd - 15th Year	Smooth, bare after disturbance
ROADS AND PIPELINES	
Slope*	5.60%
Management Practices	
1st Year	Kill/remove vegetation, blade cut, smooth, bare
2nd - 15th Year	Smooth, bare after disturbance

* Roads and pipelines follow the natural slope

ESTIMATED DISTURBANCE DUE TO DRILLING AND CONSTRUCTION ACTIVITIES IN THE WATERSHED

Baser	No. of Wells	ST DISTURBANCE					RECLAIMED AREA (acres)		LT DISTURBANCE	
		Pad (acres)	Roads (acres)	Pipelines (acres)	Dist/Well (acres)	Total (acres)	Rec/Well (acres)	Total (acres)	Acreage	Total (acres)
New Gas Wells	119	3.15	0.69	0.69	4.53	539.07	0.9	107.1	3.03	360.57
New Oil Wells	33	3.15	0.69	1.21	5.05	166.65	0.9	29.7	3.55	117.15
Gas Wells on Existing Pads	42	0	0	0.69	0.69	28.98	0	0	0.69	28.98
Oil Wells on Existing Pads	8	0	0	1.21	1.21	9.68	0	0	1.21	9.68
Central Tank Facility	5	0	0	0	0	0	0	0	3.53	17.65
Compressor Stations	6	0	0	0	0	0	0	0	1	6
Total	213	6.3	1.38	3.8	11.48	744.38	1.8	136.8	13.01	540.03

ESTIMATED SOIL LOSS DUE TO WELLS/ROADS/PIPELINES/FACILITIES BY SOIL TYPE AND MANAGEMENT PRACTICE

SOIL TYPE	AREA (acres)	AREA (%)	SOIL LOSS														
			PADS/FACILITIES								ROADS/PIPELINES				UNDISTURBED LANDS		
			MP1 1YR		MP 2 2YR-15YR		MP3 2YR-3YR		MP4 4YR-15YR		MP1 1YR		MP 2 2YR-15YR				
			Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss Rate (t/ac/yr)	Soil Loss (t/ac/yr)	Soil Loss (t/yr)
Clay-loam	664	3.53%	0.71	0.03	0.17	0.01	0.11	0.00	0.13	0.00	1.30	0.05	1.20	0.04	0.95	0.03	631
Loam	2467	13.11%	1.2	0.16	0.26	0.03	0.18	0.02	0.20	0.03	2.20	0.29	2.10	0.28	1.6	0.21	3947
Sandy-loam	12130	64.48%	0.84	0.54	0.19	0.12	0.13	0.08	0.10	0.06	1.70	1.10	1.60	1.03	1.2	0.77	14557
Silty clay-loam	690	3.67%	0.76	0.03	0.17	0.01	0.14	0.01	0.15	0.01	1.70	0.06	1.60	0.06	1.2	0.04	828
Silty clay	2860	15.20%	0.41	0.06	0.10	0.02	0.06	0.01	0.07	0.01	0.77	0.12	0.72	0.11	0.55	0.08	1573
Sand and gravel	0	0.00%															
Total	18811	100.00%		0.81		0.18		0.13		0.11		1.61		1.52		1.14	21536

ESTIMATED SOIL LOSS FOR 10% OF WELLS/FACILITIES PER YEAR

	Pads (tons)			Roads (tons)	Gas Pipelines (tons)	Oil Pipelines (tons)	Total
	ST Disturbance	Reclaimed Disturbance	LT Disturbance				
Year 1	38.99	0.00	40.92	16.89	17.89	11.09	125.77
Year 2		1.72	9.23	15.92	12.46	7.53	46.86
Year 3		1.72	9.23	15.92	12.46	6.06	45.39
Year 4		1.72	9.23	15.92	12.46	6.06	45.39
Year 5		1.72	9.23	15.92	12.46	6.06	45.39
Year 6		1.72	9.23	15.92	12.46	6.06	45.39
Year 7		1.72	9.23	15.92	12.46	6.06	45.39
Year 8		1.72	9.23	15.92	12.46	6.06	45.39
Year 9		1.72	9.23	15.92	12.46	6.06	45.39
Year 10		1.72	9.23	15.92	12.46	6.06	45.39
Year 11		1.72	9.23	15.92	12.46	6.06	45.39
Year 12		1.72	9.23	15.92	12.46	6.06	45.39
Year 13		1.72	9.23	15.92	12.46	6.06	45.39
Year 14		1.72	9.23	15.92	12.46	6.06	45.39
Year 15		1.72	9.23	15.92	12.46	6.06	45.39

ESTIMATED SOIL LOSS BASED OF THE INSTALLATION OF WELLS AND FACILITIES AT A RATE OF 10% PER YEAR

OPERATIONAL YEAR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
Year 1	125.77															125.77
Year 2	125.77	46.86														172.63
Year 3	125.77	46.86	45.39													218.02
Year 4	125.77	46.86	45.39	45.39												263.41
Year 5	125.77	46.86	45.39	45.39	45.39											308.80
Year 6	125.77	46.86	45.39	45.39	45.39	45.39										354.20
Year 7	125.77	46.86	45.39	45.39	45.39	45.39	45.39									399.59
Year 8	125.77	46.86	45.39	45.39	45.39	45.39	45.39	45.39								444.98
Year 9	125.77	46.86	45.39	45.39	45.39	45.39	45.39	45.39	45.39							490.37
Year 10	125.77	46.86	45.39	45.39	45.39	45.39	45.39	45.39	45.39	45.39						535.76
Year 11		46.86	45.39	45.39	45.39	45.39	45.39	45.39	45.39	45.39	45.39					455.38
Year 12			45.39	45.39	45.39	45.39	45.39	45.39	45.39	45.39	45.39	45.39				453.91
Year 13				45.39	45.39	45.39	45.39	45.39	45.39	45.39	45.39	45.39	45.39			453.91
Year 14					45.39	45.39	45.39	45.39	45.39	45.39	45.39	45.39	45.39	45.39		453.91
Year 15						45.39	45.39	45.39	45.39	45.39	45.39	45.39	45.39	45.39	45.39	453.91